

Dependable Anchoring Solutions

Hubbell Power Systems is the proud manufacturer of CHANCE® Anchors and Anchor Installing Tools. Employing lean manufacturing principles, continuous improvements, and unmatched customer service, HPS delivers these internationally renowned products to electric utility and communications providers around the globe.

Engineered for dependability and long-term stability, our anchoring systems feature exclusive anchoring techniques, tools, designs, and sizes. Our precision production and meticulous quality assurance produce reliable products that adhere to the strictest industry standards and perform in even the most challenging soil conditions, landslides, floods and time.

Anchor Selection and Application

ANCHOR SELECTION

Soil Mechanics and Holding Capacity

During the early stages of the screw anchor, the load resistance of an installed anchor could not be predicted with reasonable accuracy. Specific information on soil conditions was lacking, making anchor selection more or less a guess. With little consideration for soil variations and the effects of seasonal weather changes or drainage, soils were classified as “sand, clay, hardpan or swamp.” There wasn't any definitive explanation for such soil conditions.

CHANCE® soil classification data opened new horizons in predicting anchor holding capacity. Initially, it was necessary to obtain soil samples from the projected anchor depth in order to classify the soil and to make anchor recommendations. However, this method was inconvenient, costly and time-consuming.

Soil Probe, A Logical Development

CHANCE engineers developed the “Soil Test Probe”, a mechanical tool makes it possible to infer subsoil conditions from the surface of the earth. The Soil Test Probe is screwed into the soil. As it displaces the soil, probe installation torque is measured in inch-pounds on a torque gauge, which is an integral part of the installing tool. Probe torque readings are then compared with the information on the CHANCE Soil Classification Data Chart and translated into the appropriate soil classification.



PISA®: Power-Installed Screw Anchors

More than 50 years ago, A.B. Chance Company introduced this system of utilizing the power of digging equipment to install screw anchors. The system consists of a screw anchor, anchor rod and a special installing wrench. Each anchor has a galvanized steel threaded anchor rod with an upset hex, single or twin helices and a galvanized guy wire nut that is screwed to the anchor rod end. PISA Anchors can be installed in a matter of minutes.



Torque and Performance

Later this method was improved with the development of CHANCE Torque Indicators and sets of holding capacity values for given anchor types. This did not obviate the soil classification data, but strengthened and simplified it so the utility employee could install a PISA Anchor or other CHANCE anchor to a given torque value and predict with relative accuracy the holding capacity of the installed anchor. Actually, the correlation between installing torque and anchor performance required thousands of tests throughout the United States and in every conceivable soil condition. It is much labor, engineering research and investment that have made possible the development of this reliable and predictable anchoring philosophy.

Anchor Selection and Application *(continued)*



Torque Ratings

CHANCE® Screw Anchors are designed and manufactured for maximum torsional strength. During installation, some of the torque applied by the digger and measured by installation torque indicators is dissipated by friction along the wrench and not applied to the anchor itself, so it is possible to apply more torque than the anchor alone can withstand. CHANCE anchors are rated by maximum working torque or, for the more recent designs, by the 5 percent exclusion limit which is a more explicitly defined criterion based on statistical analysis of on-line quality control testing. Both ratings take into consideration the variation to be expected in anchor torsional strength due to normal variations in materials and manufacturing processes. Customers should consider this variation along with the wide variation that can be seen in the frictional loss along the wrench in deciding how much torque can be applied safely during installation. The fact that CHANCE ratings are set near the minimum credible torsional strength also should be considered in comparing CHANCE ratings to those of manufacturers who rate their anchors based on average strength.

APPLICATION INFORMATION

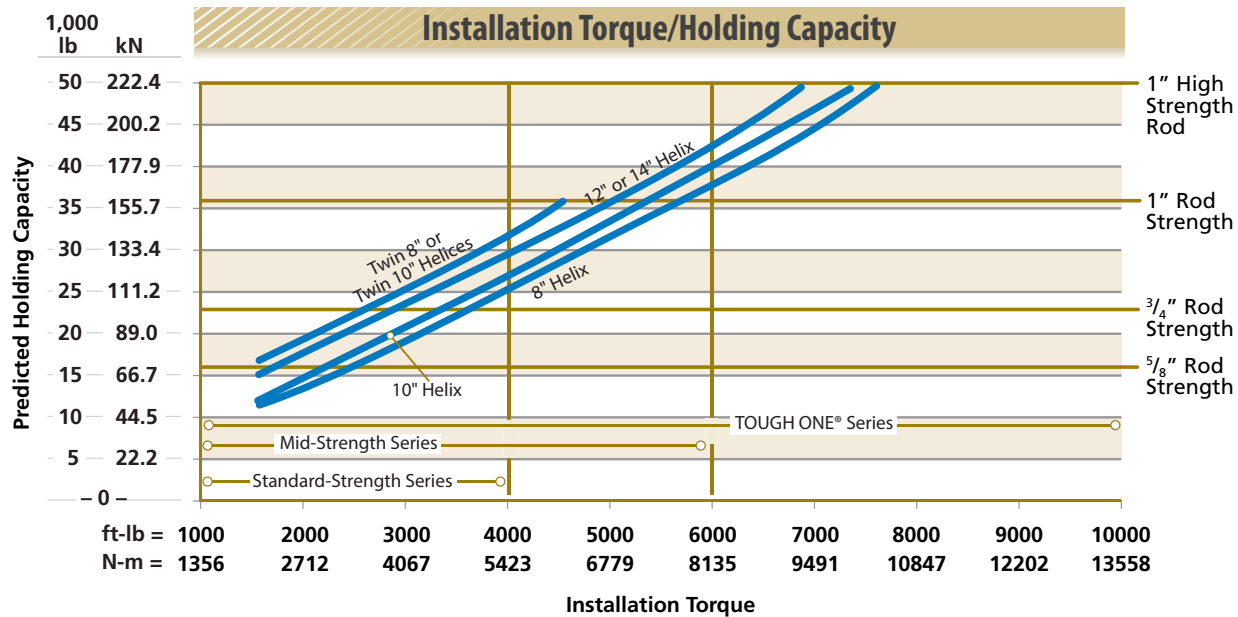
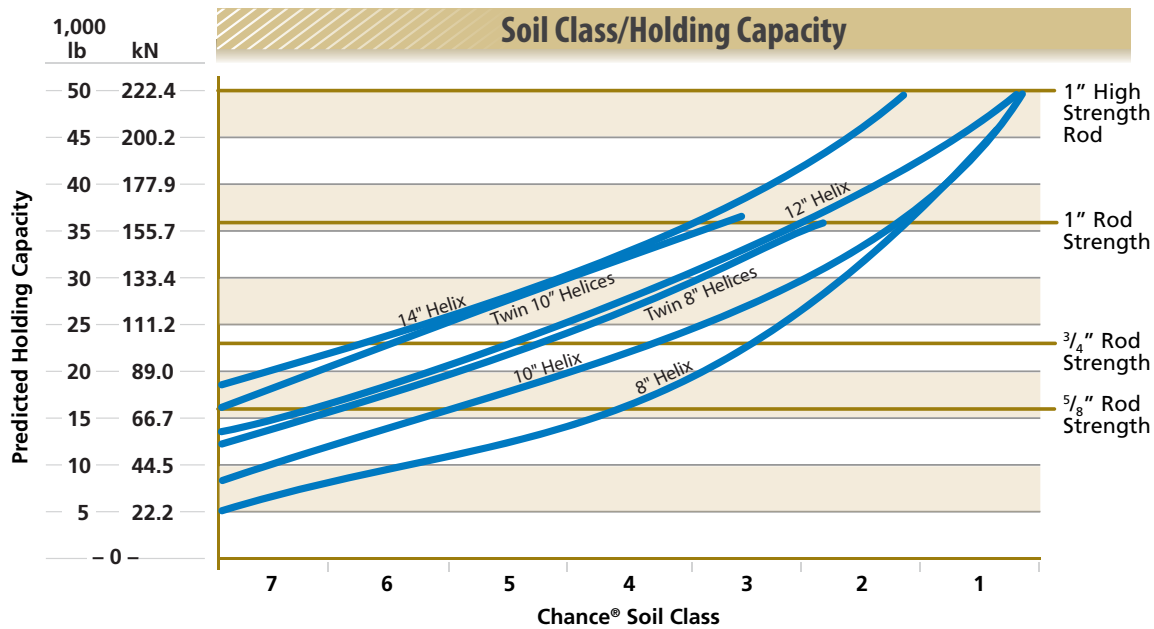
Where applicable, anchors manufactured by Hubbell Power Systems, Inc. are made from steel produced in accordance with ASTM A575 and/or ASTM A576. Where galvanized, items are galvanized in accordance with ASTM A153. Call your Hubbell representative for conformance of particular items to the above specifications.

Soil Classification Data				
Class	Common Soil Type Description	Geological Soil Classification	Probe Values ft-lb (nm)	Typical Blow Count "N" per ASTM-D1586
0	Sound hard rock, unweathered (bedrock)	Granite, Basalt, Massive Limestone	—	—
1	Very dense and/or cemented sands; coarse gravel and cobbles	Caliche, (Nitrate-bearing gravel/rock)	Over 60 (85 - 181)	60-100+
2	Dense fine sands; very hard silts and clays (may be preloaded)	Basal till; boulder clay; caliche; weathered laminated rock	Over 50 (68 - 85)	45-60
3	Dense sands and gravel; hard silts and clays	Glacial till; weathered shales, schist, gneiss and siltstone	42 - 50 (56 - 68)	35-50
4	Medium dense sand and gravel; very stiff to hard silts and clays	Glacial till; hardpan; marls	33 - 42 (45 - 56)	24-40
5	Medium dense coarse sands and sandy gravels; stiff to very stiff silts and clays	Saprolites, residual soils	25 - 33 (34 - 45)	14-25
6	Loose to medium dense fine to coarse sands to stiff clays and silts	Dense hydraulic fill; compacted fill; residual soils	17 - 25 (23 - 34)	7-14
7 ⁽¹⁾	Loose fine sands; Alluvium; loess; medium - stiff and varied clays; fill	Flood plain soils; lake clays; adobe; gumbo, fill	8 - 17 (11 - 23)	4-8
8 ⁽¹⁾	Peat, organic silts; inundated silts, fly ash very loose sands, very soft to soft clays	Miscellaneous fill, swamp marsh	Under 8 (0 - 11)	0-5

NOTE: Class 1 soils are difficult to probe consistently and the ASTM blow count may be of questionable value.

(1) It is advisable to install anchors deep enough, by the use of extensions, to penetrate a Class 5 or 6, underlying the Class 7 or 8 soils.

Power-Installed Screw Anchors (PISA®)



Helix Diameter	Rod Diameter	Rod Strength
8" = 203.2 mm	5/8" (0.625") = 15.9 mm	16,000 lb / 71.2 kN
10" = 254.0 mm	3/4" (0.756") = 19.1 mm	23,000 lb / 102.3 kN
12" = 304.8 mm	1" = 25.4 mm	36,000 lb / 160.1 kN
14" = 355.6 mm	1" High Strength = 25.4 mm	50,000 lb / 222.4 kN

NOTE: Predicted ultimate holding capacities are based on results of extensive CHANCE® tests and interpretation and are offered as an application guide only. They do not represent a guarantee of holding capacity in a particular soil class. A user must factor in his individual, appropriate safety factor. Torque values shown are steady values in homogeneous soils, not peak values that might occur in non-homogeneous soil. Torque values shown were obtained by averaging readings from the last 2 feet of anchor penetration. The anchor shaft must be aligned with the guy load to prevent premature failure of the rod. Under no circumstance should the rod and guy strand join at an angle of departure exceeding $\pm 5^\circ$ on PISA anchors.

Tough ONE® Anchor Helix Assemblies

Torque Ratings: 8,000 ft-lb and 10,000 ft-lb

SMALL HUB (2 1/4" SQUARE INSIDE)

- The C10252 series of Tough One anchors have a smaller inside hub diameter than our C10250 series. The smaller hub is designed to be installed with the CHANCE® Anchor Wrench C1021583.
- Tough One anchors give users high-strength anchor capability in all soils. You get a better anchor at an economical price.
- The anchor's sloped lead point improves penetration and helps soil flow from below the hub to above the anchor.
- Tough One anchors use standard PISA® rods (see pages A9-A10).
- Tough One anchors are painted with black paint.

Use 8,000 ft-lb Tough One Anchor in soft and medium-hard soils.

Use High-Strength 10,000 ft-lb Tough One Anchor in hard soils.



8,000 ft-lb Tough One Anchor 2 1/4" Square Inside Hub

Install with the CHANCE Standard (10,000 ft-lb) Wrench (see page A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025204 C1025208	4/144 4/144	C1025205 C1025209	4/144 4/144
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods For 5/8" Diameter Rods	C1025206 C1025210	2/72 2/72	C1025207	2/48

10,000 ft-lb Tough One Anchor 2 1/4" Square Inside Hub

Install with the CHANCE Standard (10,000 ft-lb) Wrench (see page A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
	C1025200	4/192	C1025201	4/144
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	C1025202	2/72	C1025203	2/48

Tough ONE® Anchor Helix Assemblies

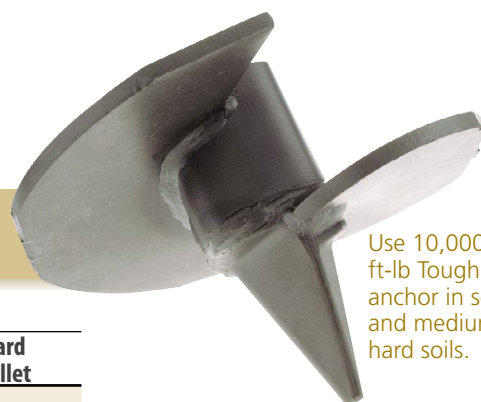
Torque Ratings: 10,000 ft-lb and 15,000 ft-lb

LARGE HUB (2½" SQUARE INSIDE)

- Tough One anchors give users high-strength anchor capability in all soils. You get a better anchor at an economical price. With Tough One anchors, there's little concern about anchor breakage when encountering hard soils.
- The anchor's sloped lead point improves penetration and helps soil flow from below the hub to above the anchor.
- Tough One anchors use standard PISA® rods (see pages A9-A10).
- It's easy to upgrade your entire program with Tough One anchors.
- If soil conditions require installations above 10,000 ft-lb, you will need our Tough One wrench system consisting of Drive-End Assembly, Kelly Bar Adapter and Locking Dog Assembly. The high-strength system will also install PISA 6 and 7 anchors. See pages A33-A34 for high-strength anchor installing wrench information.
- Tough One Anchors are painted with black paint.



Use high-strength 15,000 ft-lb Tough One in very hard soils short of solid rock.



Use 10,000 ft-lb Tough One anchor in soft and medium-hard soils.

10,000 ft-lb Tough One Anchor 2½" Square Inside Hub

Install with the CHANCE® Hybrid or Tough One Wrench (see pages A30-A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025004 C1025008	4/144 4/144	C1025005 C1025009	4/144 4/144
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods For 3/4" & 1" Diameter Rods	C1025006 C1025010	2/72 2/72	C1025007	2/48

15,000 ft-lb Tough One Anchor 2½" Square Inside Hub

Install with the CHANCE® Tough One Wrench System (see pages A30-A31)

	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	C1025000	4/144	C1025001	3/108
	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
	C1025002	2/72	C1025003	2/48

PISA® Anchor Helix Assemblies

Standard Strength and Mid Strength



CHANCE® Standard-Strength 4,000 ft-lb anchors and Mid-Strength 6,000 ft-lb anchors have curvilinear leading edges to help penetrate rocky soils and to reduce damage during installation. These anchors are available in single and twin-helix designs. The same installing wrench installs Standard-Strength and Mid-Strength anchors as well as Tough One® C10252 series anchors. See pages A30-A31 for installing wrench information. Anchors are painted with black paint.



PISA anchor installation takes about five minutes with two workers.

AERIAL
INSTALLATION

Standard-Strength Anchor Series

1 3/8" Core – 4000 ft-lb Typical Working Torque – Squared Helix 3" Helix Pitch

Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods	024474	8/240	024476	4/96	024462	4/80	—	—
For 3/4" & 1" Diameter Rods	024475	8/240	024478	4/96	024481	4/80	024484	2/32

Twin Helix	Catalog Number			
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	012904	1/30	012905	1/30

Mid-Strength Anchor Series

1 3/8" Core – 6000 ft-lb Typical Working Torque – Squared Helix 3" Helix Pitch

Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
For 5/8" Diameter Rods	E1021629	8/240	E1021630	4/144	E1021631	4/96	—	—
For 3/4" & 1" Diameter Rods	E1021632	8/240	E1021633	4/144	E1021634	4/96	E1021801	2/32

Twin Helix	Catalog Number					
	4" Diameter	Standard Pkg/Pallet	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet
For 3/4" & 1" Diameter Rods	E1021635	1/30	E1021636	1/30	E1021637	1/30

NOTE: See pages A9 - A10 for PISA anchor rods and eye nuts.

PISA® 6 and PISA 7 Anchor Helix Assemblies

- CHANCE® PISA-6 6000 ft-lb anchors and PISA -7 7000 ft-lb anchors have curvilinear leading edges to help penetrate rocky soils and to reduce damage during installation. These anchors are available in single and twin-helix designs.
- PISA-6 and PISA-7 anchors have a 1½" square solid core for added strength. See pages 30-31 for information on the 1½" installing wrench.
- Anchors are painted with black paint.



PISA 6 Anchor

1½" Core – 6000 ft-lb Typical Working Torque – Squared Helix – 3" Helix Pitch								
Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
	For ¾" Diameter Rods	E1020816	8/240	E1020817	4/144	—	—	—
For ¾" & 1" Diameter Rods	E1020819	8/240	E1020820	4/144	E1020821	4/80	T1022142	2/32
Twin Helix	Catalog Number							
	Two 8" Diameter	Standard Pkg/Pallet	Two 10" Diameter	Standard Pkg/Pallet				
	For ¾" & 1" Diameter Rods	E1020822	1/30	E1020823	1/30			

PISA 7 Anchor

1½" Core – 7000 ft-lb Typical Working Torque – Squared Helix – 3" Helix Pitch								
Single Helix	Catalog Number							
	8" Diameter	Standard Pkg/Pallet	10" Diameter	Standard Pkg/Pallet	12" Diameter	Standard Pkg/Pallet	14" Diameter	Standard Pkg/Pallet
	For ¾" & 1" Diameter Rods	E1021223	8/240	E1020250	4/96	T1022143	4/80	T1022319
								2/32
Twin Helix	Catalog Number							
	Two 8" Diameter	Standard Pkg/Pallet	Two 4" Diameter	Standard Pkg/Pallet	Two 4" Diameter	Standard Pkg/Pallet		
	For ¾" & 1" Diameter Rods	E1021219	1/30	E1021220	1/30	V1021428	1/30	

NOTE: See pages 9 - 10 for PISA anchor rods and eyenuts.

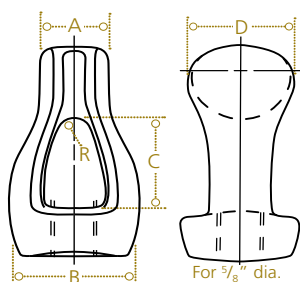
PISA® Anchor Rods, Eyenuts and Couplings

Eyenut						
	Catalog Number					
	Thimbleye®	Standard Pkg/Pallet	Twineye®	Standard Pkg/Pallet	Tripleye®	Standard Pkg/Pallet
For 5/8" Diameter Rods	12587	25/2250	12589	25/1200	12593	25/750
For 3/4" & 1" Diameter Rods	6512	25/1200	6562	25/1200	12585	25/1200
For 1" Diameter HS ⁽¹⁾	—	—	6562H	25/1200	12585H	25/1250
For 5/8" Diameter Rod — Communication Market Stamp	—	—	12589BS	25/1200	—	—
For 1" Diameter Rod — Communication Market Stamp	—	—	6562BS	25/1200	—	—

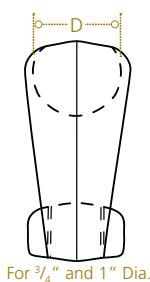
(1) HS Eyenuts are galvanized and painted orange.

Thimbleye Nuts					
	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8" Diameter Rods	7/8	1 1/8	1 3/8	1 11/64	1/4
For 3/4" & 1" Diameter Rods	1 1/8	2 5/64	1 19/32	1 5/8	1 3/32

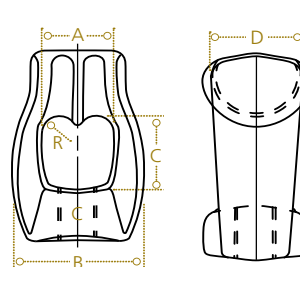
Twineye Nuts					
	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8", 3/4" & 1" Diameter Rods	1 13/32	2 25/64	1 27/64	1 1/2	5/16



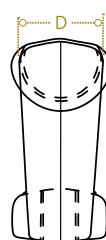
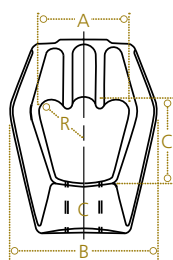
For 5/8" dia.



For 3/4" and 1" Dia.



Tripleye Nuts					
	A Inches	B Inches	C Inches	D Inches	R Inches
For 5/8", 3/4" & 1" Diameter Rods	1 3/4	2 13/16	1 5/8	1 1/2	1/4



Rod					
	3 1/2-ft Rod		7-ft Rod		Ultimate Strength lb ⁽¹⁾
	Catalog Number	Standard Pkg/Pallet	Catalog Number	Standard Pkg/Pallet	
For 5/8" Diameter	12336P	5/50	12332P	5/50	16,000
For 3/4" Diameter	12634P	5/50	12632P	5/50	23,000
For 1" Diameter	12338P	5/50	12334P	1/50	36,000
For 1" Diameter HS	C1021987	5/50	C1021986	2/50	50,000

(1) Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

NOTE: All components shown on this page are hot-dip galvanized per ASTM A153.

PISA® Anchor Rods, Eyenuts and Couplings *(continued)*

Coupling

Coupling	Catalog Number	Standard Pkg/Pallet	Ultimate Strength
For 5/8" Diameter Rods	12245P	50/1950	16,000 lbs
For 3/4" & 1" Diameter Rods	12247P	50/2400	50,000 lbs

NOTE: Couplings are required only when it is necessary to add additional rods of 3½ ft or 7 ft to form an extension.

Extension Rod & Coupling Combinations

Extension Rod & Coupling Combinations	3½-ft Rod		7-ft Rod	
	Catalog Number	Standard Pkg/Pallet	Catalog Number	Standard Pkg/Pallet
5/8" Diameter	12249A	5/50	—	—
3/4" Diameter	12250A	5/50	C1022328	5/50
1" Diameter	12251A	5/50	12255A	2/50

PISA Rod & Eyenut Combinations

Catalog Number	Rod & Eyenut
E1020031	5/8" x 3½' Rod & Thimbleye Nut
E1020047	5/8" x 31/2' Rod & Tripleye Nut
E1020035	5/8" x 7' Rod & Thimbleye Nut
E1020043	5/8" x 7' Rod & Twineye Nut
E1020051	5/8" x 7' Rod & Tripleye Nut
E1020032	3/4" x 31/2' Rod & Thimbleye Nut
E1020040	3/4" x 31/2' Rod & Twineye Nut
E1020036	3/4" x 7' Rod & Thimbleye Nut
E1020044	3/4" x 7' Rod & Twineye Nut
E1020052	3/4" x 7' Rod & Tripleye Nut
E1020041	1" x 31/2' Rod & Twineye Nut
E1020049	1" x 31/2' Rod & Tripleye Nut
E1020037	1" x 7' Rod & Thimbleye Nut
E1020045	1" x 7' Rod & Twineye Nut
E1020053	1" x 7' Rod & Tripleye Nut

Corrosion-Protected PISA Rod & Coupling

Rod Catalog Number	Fits Rod Size	Standard Pkg/Pallet
C1021996	1" x 7'	2/50
C1022061	1" x 3½'	5/50
Coupling Catalog Number	Fits Rod Size	Standard Pkg/Pallet
C1025240	1"	50/2400

NOTE: Rod is asphalt-coated galvanized with heat-shrink and plastic tube covering. Coupling is galvanized and covered with heat-shrink tubing.

NOTE: All components shown on this page are hot-dip galvanized per ASTM A153.



RR (Round Rod) Screw Anchors

The Round-Rod (RR) multi-helix anchors are used in areas where weak soil conditions exist and moderate holding capacities are required. All helix lead sections are 7-ft long. Extension shafts may be required for installation to proper depth. RR Screw Anchors consist of three galvanized components: Lead Section, Extension Shaft (which includes an integral coupling), and the Guy Adapter. Each extension and guy adapter includes a high-strength bolt and nut. Type RR anchors torque rating is 2,300 ft-lb. Ultimate tension rating for RR mechanical strength is 70,000 lb. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Lead Sections

Catalog Number	Length ft	Helix Combinations Inches	Standard Pkg/Pallet	Holding Capacity vs Soil Class lb		
				Class 7	Class 6	Class 5
012690AE	7	8 - 10	1/20	19,000	23,000	27,000
012690AEJ	7	8 - 10 - 12	1/20	26,000	32,000	39,000
V1090007	7	10 - 10 - 10	1/15	25,000	31,000	—
V1090006	7	10	1/20	17,000	21,000	24,000

Extensions

Catalog Number	Nominal Length ft	Standard Pkg/Pallet
12696	3½	1/50
12697	5	1/50
12698	7	1/30
12699	10	1/50

Guy Adapters

Catalog Number	Nominal Length Inches	Description	Standard Pkg/Pallet
C1020023	18	Thimbleye*	5/175
C1020024	18	Twineye*	5/250
C1020025	18	Tripleye*	5/250
C1100026	20	Threaded Stud	5/130
C1100041	18	Ovaleye	5/200

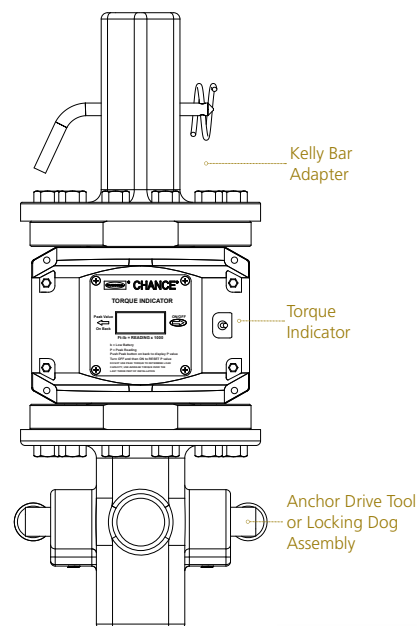
Load Capacity⁽¹⁾ Based on Installation Torque⁽²⁾ Load Capacity of RR Anchors in Soil (Pounds Tension)

Helix Combinations Inches	Installation Torque		
	1,500	2,000	2,300
10	16,000	22,000	28,000
8 - 10	17,000	23,000	29,000
10 - 10 - 10	19,000	25,000	31,000
8 - 10 - 12	19,000	25,000	31,000

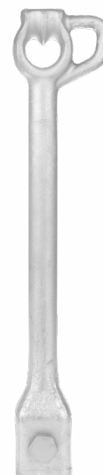
(1) Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc.

(2) The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration.

Typical "RR" Drive String



Extension



Guy Adapter



Lead Section

SS5 (Square Shaft) Screw Anchors

Square-Shaft (SS) multi-helix screw anchors are designed for heavy-guy loading. They have 1½" square steel shafts. Extension shafts must be coupled to the helix section for installation to the proper depth. For installation tool options, see pages 29 - 42. SS Screw Anchors consist of three galvanized components: Lead Section, Extension Shaft (which includes an integral coupling) and Guy Adapter. Extensions and Guy Adapters include a high-strength bolt and nut. Typical working torque is 5,500 ft-lb and minimum ultimate tension strength is 70,000 lb. Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Lead Sections⁽¹⁾

Catalog Number	Length ft	Helix Combinations Inches	Standard Pkg/Pallet	Holding Capacity – lb vs Soil Class					
				Class 7	Class 6	Class 5	Class 4	Class 3	Class 2
012642AE	3	8 - 10	1/20	19,000	23,000	27,000	32,000	36,000	41,000
012642EJ	3½	10 - 12	1/20	21,000	26,000	31,000	36,000	41,000	46,000
012642AEJ	5½	8 - 10 - 12	1/20	26,000	32,000	39,000	46,000	51,000	58,000
012642EJN	7	10 - 12 - 14	1/20	29,000	37,000	45,000	53,000	61,000	69,000
012642AEJN	10½	8 - 10 - 12 - 14	1/20	31,000	40,000	49,000	58,000	67,000	—
012642EJNS	10½	10 - 12 - 14 - 14	1/20	40,000	51,000	62,000	70,000	—	—

(1) Lead sections are banded to wood blocks to facilitate forklift handling.

Extensions

Catalog Number	Nominal Length ft	Helix Dia Inches	Standard Pkg/Pallet
12655	3½	—	1/50
12656	5	—	1/50
12657	7	—	1/40
12658	10	—	1/30
12656N	5	14	1/20
12655J	3½	12	1/20

NOTE: Extension shafts are banded to wood blocks to facilitate forklift handling.

Guy Adapters

Catalog Number	Nominal Length Inches	Description	Standard Pkg/Pallet
C1020023	18	Thimbleye®	5/200
C1020024	18	Twineye®	5/200
C1020025	18	Tripleye®	5/200
C1100026	20	Threaded Stud	5/200
C1100041	18	Ovaleye	5/200

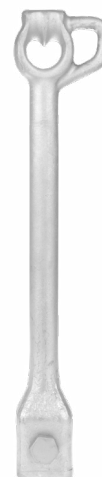
NOTE: Guy adapters are shipped in corrugated cartons.

NOTE: Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc. The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration. Minimum depth is five x diameter of largest helix.

Extra Bolt & Nut

for Extensions & Guy Adapters
Standard Package: 10 each

Catalog Number	Description
P0010041P	Extra SS5 Bolt
055449P	Extra SS5 Nut



Guy Adapter



Extension

SS5 (Square Shaft) Screw Anchors *(continued)*

Lead Section & Guy Adapter Combinations⁽¹⁾

Catalog Number	Guy Adapter	Helix Combinations Inches
126541AE	Thimbleye®	8 - 10
126541EJ	Thimbleye®	10 - 12
126541AEJ	Thimbleye®	8 - 10 - 12
126541EJN	Thimbleye®	10 - 12 - 14
126541EJNS	Thimbleye®	10 - 12 - 14 - 14
126542AE	Twineye®	8 - 10
126542EJ	Twineye®	10 - 12
126542AEJ	Twineye®	8 - 10 - 12
126542EJN	Twineye®	10 - 12 - 14
126542EJNS	Twineye®	10 - 12 - 14 - 14
126543AE	Tripleye®	8 - 10
126543EJ	Tripleye®	10 - 12
126543AEJ	Tripleye®	8 - 10 - 12
126543EJN	Tripleye®	10 - 12 - 14
126543EJNS	Tripleye®	10 - 12 - 14 - 14

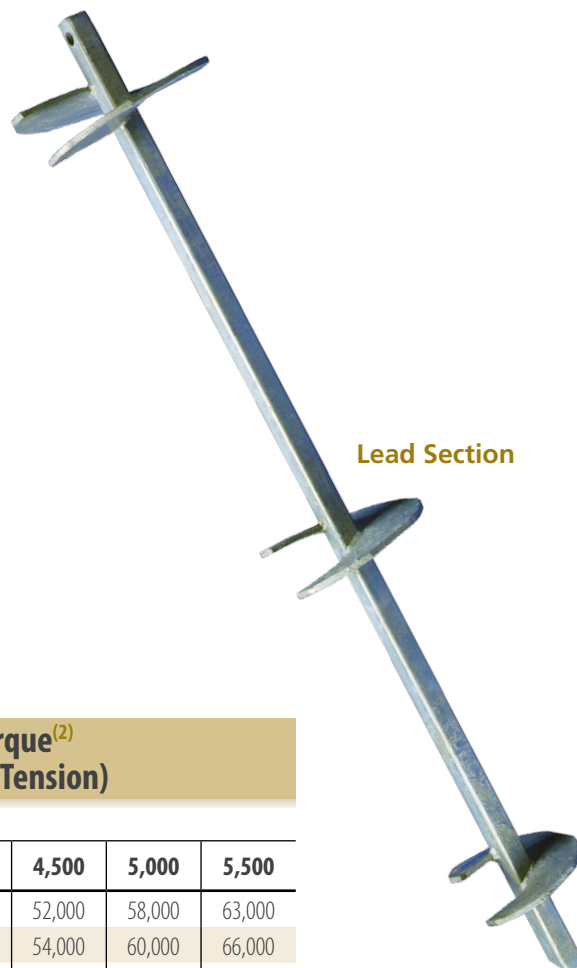
(1) Lead sections are banded to wood blocks to facilitate forklift handling. Guy adapters are shipped in separate corrugated cartons.

Load Capacity⁽¹⁾ Based on Installation Torque⁽²⁾ Load Capacity of SS Anchors in Soil (Pounds Tension)

Helix Combinations Inches	Installation Torque								
	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500
8 - 10	17,000	23,000	29,000	34,000	40,000	46,000	52,000	58,000	63,000
10 - 12	18,000	24,000	30,000	36,000	42,000	48,000	54,000	60,000	66,000
8 - 10 - 12	19,000	25,000	31,000	38,000	44,000	50,000	56,000	62,000	68,000
10 - 12 - 14	20,000	26,000	32,000	39,000	46,000	52,000	58,000	65,000	70,000
8 - 10 - 12 - 14	20,000	27,000	34,000	40,000	47,000	54,000	61,000	68,000	70,000
10 - 12 - 14 - 14	21,000	28,000	35,000	42,000	49,000	56,000	63,000	70,000	70,000

(1) Load capacities listed above are ultimate values based on average test data and are offered as an application guide. Typical deflection at ultimate load ranges between 2 and 4 inches. The listed values should be reduced by an appropriate factor of safety. More specific data on soils and anchor performance in any site condition can be obtained by contacting Hubbell Power Systems, Inc.

(2) The torque values shown are steady values in homogeneous soils, not peak values that can occur in non-homogeneous soils such as glacial till or other rocky soils. The torque values shown are obtained by averaging the readings from the last 2 feet of anchor penetration. Minimum depth is five x diameter of largest helix.



High-Strength SS Anchors for Heavy Tension Loading

AERIAL
INSTALLATION



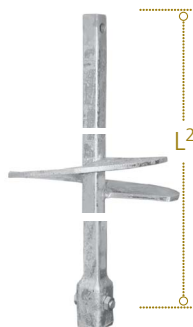
Lead Section



Lead Section



Plain
Extension



Single Helix
Extension



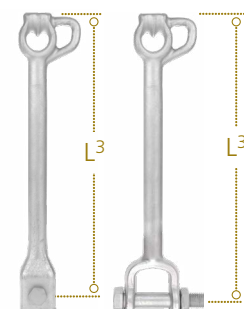
Twin Helix
Extension



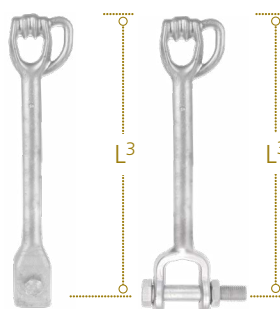
Chain
Shackle



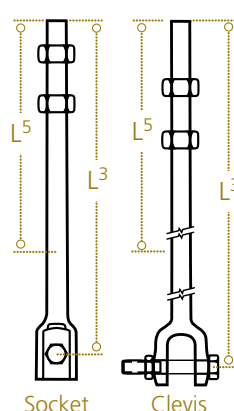
Thimbleye®
Adapter



Twineye®
Adapter



Tripleye®
Adapter



Threaded
Adapter



Tripleye®
Chain Shackle

Ratings				
Mechanical Properties	SS 150 1½" Square Shaft	SS 175 1¾" Square Shaft	SS 200 2" Square Shaft	SS 225 2¼" Square Shaft
Max Installation Torque	7,000 ft-lb	10,500 ft-lb	16,000 ft-lb	21,000 ft-lb
Min Ultimate Tension Strength	70,000 lb	100,000 lb	150,000 lb	200,000 lb

Lead Sections – Hot-Dip Galvanized								
Helix Configuration Inches	SS 150		SS 175		SS 200		SS 225	
	Catalog Number	L¹ Inches	Catalog Number	L¹ Inches	Catalog Number	L¹ Inches	Catalog Number	L¹ Inches
8 & 10	C1100385	30	C1100227	30	—	—	—	—
10 & 12	C1100871	42	C1100884	58	—	—	—	—
6, 8 & 10	—	—	—	—	C1100569	60	C1100543	54
8, 10 & 12	C1100386	57	C1100235	60	C1100570	60	C1100544	75
10, 12 & 14	C1100838	84	C1100923	84	C1100791	84	—	—
14, 14 & 14	C1100504	120	C1100505	124	C1100572	122	C1100545	114
8, 10, 12 & 14	T1100521	—	C1100247	124	C1100573	122	C1100591	115

High-Strength SS Anchors for Heavy Tension Loading *(continued)*

Extensions – Hot-Dip Galvanized

Helix Configuration	SS 150		SS 175		SS 200		SS 225	
	Catalog Number	L ² Inches	Catalog Number	L ² Inches	Catalog Number	L ² Inches	Catalog Number	L ² Inches
None	C1100388	37	C1100136	37	C1100563	37	C1100645	33
None	C1100470	59	C1100137	59	C1100564	58	C1100646	60
None	C1100389	80	C1100138	80	C1100565	80	C1100647	80
None	C1100440	122	C1100140	124	C1100566	123	—	120
Single 14" Helix	C1100471	48	C1100472	48	C1100577	45	C1100650	39
Twin 14" Helices	C1100454	80	C1100450	80	C1100581	80	C1100652	78
Triple 14" Helices	C1100475	123	C1100476	124	C1100586	123	—	120

Termination Adapters – Hot-Dip Galvanized

Description	SS 150			SS 175			SS 200			SS 225		
	Catalog Number	Notes	L3 Inches	Catalog Number	Notes	L3 Inches	Catalog Number	Notes	L3 Inches	Catalog Number	Notes	L3 Inches
Thimbleye Adapter	C1020023	—	17	T1100311 ⁽¹⁾	—	17	T1100312 ⁽²⁾	—	17	—	—	—
Twineye Adapter	C1020024	—	17	T1100964 ⁽¹⁾	—	—	—	—	—	—	—	—
Tripleye Adapter	C1020025	—	17	T1100465 ⁽¹⁾	—	17	T1100629 ⁽²⁾	—	—	—	—	—
Ovaleye Adapter	C1100041	—	17	—	—	—	—	—	—	—	—	—
Threaded Adapter	C1100026	L ⁵ =13½	20	T1100352 ⁽¹⁾⁽³⁾	L ⁵ =36"	48	—	—	—	—	—	—
Chain Shackle	C1100574 ⁽⁴⁾	L ⁴ =1½	5⅞	T1100134	L ⁴ =1⅜	6⅝	C1100557	L ⁴ =2¼"	8¼	C1100558	L ⁴ =2⅜"	9

(1) Clevis fitting. Others have Socket fitting.

(2) Rated at 70,000 lb.

(3) T1100352 includes two nuts.

(4) Tripleye shackle.

Extra Bolt & Nut– Hot-Dip Galvanized

for Extensions & Guy Adapters (socket and clevis types) Standard Package: 10 each

Description	SS5/SS 150	SS 175	SS 200	SS 225
Extra Bolt– Extension	P0010041P	P0011443P	P0011445P	P0011771P
Extra Bolt– Adapter	P0010041P	P0011444P	P0010690P	–
Extra Nut– Both	055449P	055591P	P0010030P	056292P

No-Wrench Screw Anchor

For Hand or Machine Installation

CHANCE® No-Wrench Screw Anchors may be installed by hand or machine. The Thimbleye® Eye or Tripleye® Eye on the rod has a large opening to admit a turning bar for screwing the anchor down. The eye will also fit into an adapter available from most hole-boring machine manufacturers so the anchor may be power-installed. The No-Wrench Screw Anchor consists of a drop-forged steel Thimbleye Eye or Tripleye Eye rod welded to a steel helix. The entire anchor is hot-dip galvanized for long resistance to rust.

No-Wrench Screw Anchors can be installed to a greater depth to reach a firmer soil by using an extension rod. Maximum installing torque is 2,300 ft-lb for 1¼" diameter rod. Catalog numbers 4345, 6346 and PS816 may be ordered with a forged Thimbleye rod rather than the standard Tripleye rod. To order a Thimbleye rod simply add "1" to the suffix of the catalog number. Example: Catalog Number 63461.

Typical working torque:
¾" Rod 400 ft-lb
1" Rod 1000 ft-lb
1¼" Rod 2300 ft-lb

Extension Rod 402
forged coupling
engages forged Tripleye
fitting on Anchor Rod.

Application and Ordering Information

Catalog Number	Description	Anchor Size Dia Inches	Rod Dia & Length Inches	Standard Pkg/Pallet	No-Wrench Screw Anchor Holding Capacity lb vs Soil Class		
					Class 5	Class 6	Class 7
4345	Tripleye	4	¾ x 54	1/100	4,500	3,000	1,500
6346 ⁽¹⁾	Tripleye	6	¾ x 66	1/100	6,500	5,000	2,500
PS816	Tripleye	8	1 x 66	1/60	11,000	9,000	6,000
10146	Tripleye	10	1¼ x 66	1/20	13,000	10,000	7,000
10148	Tripleye	10	1¼ x 96	1/20	13,000	10,000	7,000
12537	Tripleye	14	1¼ x 96	1/20	16,000	15,000	12,000
15148	Tripleye	15	1¼ x 96	1/20	19,000	17,000	14,000
43451	Thimbleye	4	¾ x 54	1/100	4,500	3,000	1,500
63461	Thimbleye	6	¾ x 66	1/100	6,500	5,000	2,500
8161	Thimbleye	8	1 x 66	1/60	11,000	9,000	6,000

Extension Rod

402	Tripleye	—	1¼ x 72	1/50	—	—	—
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(1) RUS accepted.

NOTE: If hand installed, holding capacity may be reduced by as much as 10% to 20%. Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

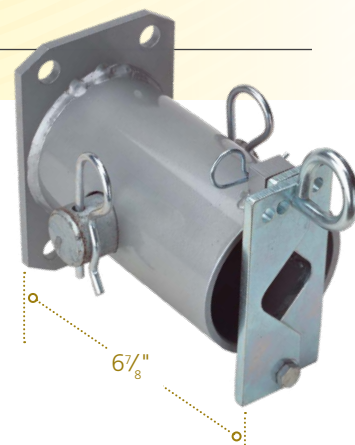
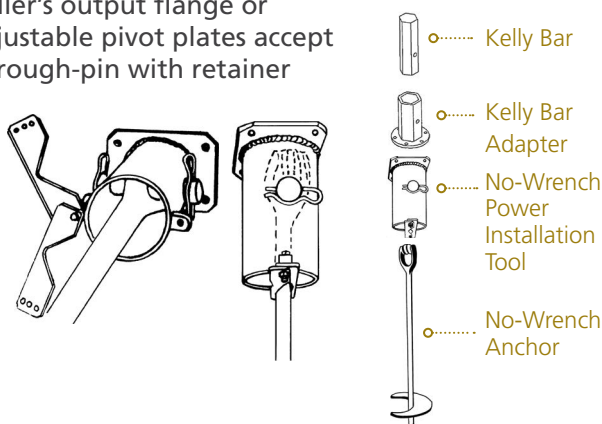
No-Wrench Power Installation Tool

This tool bolts directly to the installer's output flange or appropriate Kelly Bar Adapter. Adjustable pivot plates accept rods from ¾" to 1¼" diameter. Through-pin with retainer clip passes through the eyenut.

It has 4 holes on a 5¼" bolt circle for attachment and includes 4½" x 1½" bolts, nuts and lockwasher.

Tool can be attached to any CHANCE Torque Indicator.

No-Wrench Typical Drive String



Catalog Number	Weight lb
E3030255	9

Bust Expanding Anchor

More Holding Capacity for Less

- Four different sizes are available with holding capacity as high as 40,000 pounds.
- CHANCE® Bust Expanding Anchors expand to take full advantage of the available area. All eight blades wedge into undisturbed earth and there is no wasted space between blades.
- This anchor should be installed in relatively dry and solid soils. The effectiveness of the anchor is dependent upon the thoroughness of backfill tamping.



Application and Ordering Information



Catalog Number	Anchor Hole Size Inches	Area Square Inches	Rod Size ⁽¹⁾ Inches	Standard Pkg/Pallet	8-Way Anchor Holding Capacity – lb vs Soil Class				
					Class 3	Class 4	Class 5	Class 6	Class 7
6870	6	70	5/8	12/288	16,000	14,000	11,000	8,500	5,000
88135	8	135	5/8 or 3/4	6/150	26,500 ⁽²⁾	22,000 ⁽²⁾	18,000 ⁽²⁾	15,000	10,000
1082	10	200	1	2/48	31,000	26,500	21,000	16,500	12,000
108234	10	200	3/4	2/48	31,000 ⁽²⁾	26,500 ⁽²⁾	21,000	16,500	12,000
1283	12	300	1 1/4	2/36	40,000	34,000	26,500	21,500	16,000
12831	12	300	1	2/36	40,000 ⁽²⁾	34,000	26,500	21,500	16,000

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

(1) Order separately.

(2) Ultimate strength of rod may limit holding capacity. See pages 19-20 for rod ratings and selection. Add suffix "G" for galvanized. Example: 88135G.

Expanding and Tamping Bar

The improved CHANCE fiberglass handle Expanding and Tamping Bar simplifies the job of expanding anchors. The curved tamper and expander head distributes the weight of the bar evenly around the anchor rod to reduce handle vibration. The hook of the Expanding and Tamping Bar wraps around the anchor rod to keep the expanding head from slipping off the anchor top plate. This tool is also effectively used for tamping in soil above the installed anchor. The base casting is attached directly to the Epoxiglas® handle. To order fiberglass replacement handles or expander head, see page 40.

Catalog Number	Description	Length ft	Approx Ship Wt Each (lbs)
C3020003	Expanding & Tamping Bar	10	22
C3020004	Expanding & Tamping Bar	12	24



Cross-Plate Anchor

The Cross-Plate Anchor is made for installation in holes drilled by power diggers. Because the size of the hole does not affect holding capacity, the hole can be dug by the same auger that is used to dig the pole holes on transmission projects. Cross-Plate Anchors are installed in a diagonal bored hole which is undercut so the anchor is at right angles to the guy. A rod trench is either cut with a trenching tool or drilled with a small power auger. Both anchor and rod trench should be refilled and tamped.

Application and Ordering Information

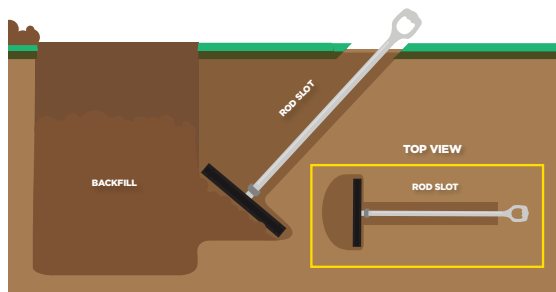
Catalog Number	Hole Size Inches	Standard Pkg/Pallet	Approx Wt per Carton ⁽¹⁾ lb	Area Sq In	Rod Size ⁽²⁾ Inches	Holding Capacity ⁽³⁾ lb (No Safety Factors Included) vs Soil Class				
						Class 3	Class 4	Class 5	Class 6	Class 7
X16	16	3/162	62	150	5/8 & 3/4	26,500 ⁽³⁾	22,500 ⁽³⁾	18,500 ⁽³⁾	14,500	9,500
X20	20	2/64	64	250	5/8 & 3/4	34,000	29,000 ⁽³⁾	24,000 ⁽³⁾	19,000 ⁽³⁾	14,000
X201	20	2/64	64	250	1	34,000	29,000	24,000	19,000	14,000
X2434	24	1/48	34	400	5/8 & 3/4	45,000 ⁽³⁾	37,000 ⁽³⁾	30,000 ⁽³⁾	23,500 ⁽³⁾	18,000 ⁽³⁾
X24 ⁽¹⁾	24	1/48	34	400	1	45,000 ⁽³⁾	37,000 ⁽³⁾	30,000	23,500	18,000
X241 ⁽¹⁾	24	1/48	34	400	1 1/4	45,000	37,000	30,000	23,500	18,000

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

(1) X24 Series are not available in cartons and are shipped as individual pieces.

Holding capacities are ultimate values. An appropriate factor of safety should be used to determine the allowable or service load. Hubbell Power Systems, Inc. recommends a factor of safety of at least 2 for permanent structures

For Class 3, 4, 5, and 6 soils, the depth required to achieve the holding capacities listed in the table is 5 vertical feet to the center of the plate. For Class 7 soils, the depth required is 7 vertical feet to the center of the plate.



*Order Anchor Rod Separately

Anchor Rod Extensions

These Anchor Rod Extensions are primarily for making above-grade connections between installed anchors and guy wires. Each extension's forged eye is designed to distribute pulling stresses uniformly over individual strands of guy wire and keep the guy wire from spreading, kinking or bending. The drop-forged eye of each extension rod is stronger than the rod itself. Rod length and diameter are stamped below each rod eye. Each extension rod is hot-dip galvanized and includes a high-strength bolt and nut.

Welded Clevis Style



Catalog Number	Description	Rod Dia & Length Inches	Clevis Bolt Dia Inches	Standard Pkg/Pallet	Strength lb
PSC1022176	Tripleye*	3/4 x 24	3/4	5/50	23,000
PSC1022177	Tripleye*	3/4 x 36	3/4	1/50	23,000
PSC1022178	Tripleye*	3/4 x 72	3/4	1/50	23,000
PSC1022183	Twineye*	1 x 24	7/8	5/50	36,000
PSC1022305	Tripleye*	1 x 24	7/8	1/50	36,000
PSC1022184	Twineye*	1 x 36	7/8	1/50	36,000
PSC1022306	Tripleye*	1 x 36	7/8	1/50	36,000
PSC1022185	Twineye*	1 x 72	7/8	1/50	36,000
PSC1022307	Tripleye*	1 x 72	7/8	1/50	36,000

Forged Clevis Style



Catalog Number	Description	Rod Dia & Length Inches	Clevis Bolt Dia Inches	Standard Pkg/Pallet	Strength lb
4022	Tripleye*	1 1/4 x 24	1	1/50	40,000
PS4023	Tripleye*	1 1/4 x 36	1	1/50	40,000
402	Tripleye*	1 1/4 x 72	1	1/50	40,000

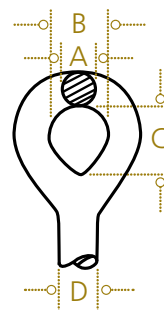
Galvanized Anchor Rods

- Available for one, two or three guys for use with expanding and Cross Plate Anchor.
- Thimbleye®, Twineye® and Tripleye® rods distribute pulling stresses uniformly over individual strands of guy wire and keep the guy wire from spreading, kinking or bending.
- The drop-forged eye of each anchor rod is stronger than the rod itself.
- Rod length and diameter are stamped below each rod eye.
- Each rod is threaded 3½" minimum length.
- Nuts are included.



Ovaleye Adapter

D Inches	A Inches	B Inches	C Inches
5/8	9/16	1½	2
1	7/8	1½	2



Tensile Strength⁽¹⁾

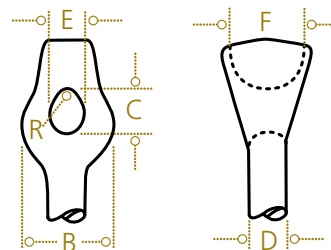
Rod Size inches	Strength lb	Nut Part Number
½	10,000	55058P
5/8	16,000	55006P
¾	23,000	55312P
1	36,000	55320P
1¼	58,000	56001P

(1) Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Thimbleye Adapter

D Inches	R ⁽¹⁾ Inches	B Inches	C Inches	E Inches	F Inches
½	3/16	1¼	9/16	½	1¼
5/8	¼	1½	11/16	9/16	13/8
¾	9/32	15/8	13/16	11/16	1½
1	13/32	2¼	11/8	15/16	15/8

(1) 2 x R or 2 x R1 = maximum-diameter guy strand.

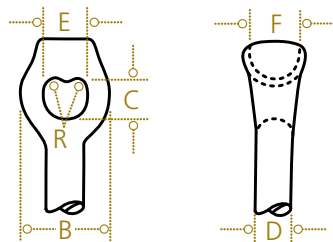


Galvanized Anchor Rods *(continued)*

Twineye Adapter

D Inches	R ⁽¹⁾ Inches	B Inches	C Inches	E Inches	F Inches
5/8	7/32	1 3/4	7/8	1 5/16	1 1/4
3/4	1/4	2	1	1 1/16	1 3/8
1	5/16	2 5/8	1 3/16	1 5/16	1 1/2
1 1/4	3/8	2 15/16	1 1/4	1 9/16	1 5/8

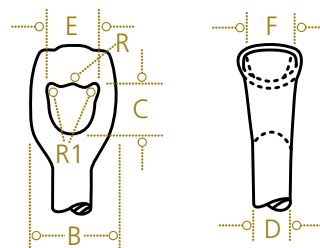
(1) 2 x R or 2 x R1 = maximum-diameter guy strand.



Tripleye Adapter

D Inches	R ⁽¹⁾ Inches	R1 ⁽²⁾ Inches	B Inches	C Inches	E Inches	F Inches
3/4	1/4	7/32	2 1/2	1 11/16	1 1/2	1 1/4
1	1/4	7/32	2 9/16	1 11/16	1 5/8	1 1/2
1 1/4	9/32	1/4	2 7/8	1 11/16	1 11/16	1 5/8

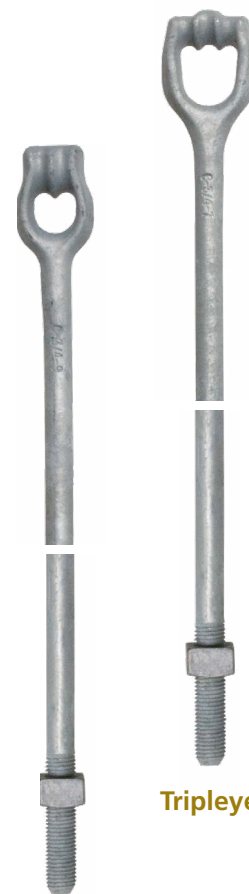
(1) 2 x R or 2 x R1 = maximum-diameter guy strand.



Catalog Number				Size	Communication Market Product		
Thimbleye® Adapter	Twineye® Adapter	Tripleye® Adapter	Ovaleye Adapter		Thimbleye® Adapter	Twineye® Adapter	Tripleye® Adapter
5305	—	—	—	1/2" x 5'	—	—	—
5306	—	—	—	1/2" x 6'	—	—	—
5307	—	—	—	1/2" x 7'	—	—	—
5315	—	—	—	5/8" x 5'	—	—	—
5316 ⁽²⁾	5346	—	—	5/8" x 6'	—	—	—
5317 ⁽²⁾	5347 ⁽²⁾	—	PS6417	5/8" x 7'	—	—	—
5318 ⁽²⁾	5348 ⁽²⁾	—	—	5/8" x 8'	—	400260980	—
5326 ⁽²⁾	5356 ⁽²⁾	—	—	3/4" x 6'	—	—	—
5327 ⁽²⁾	5357 ⁽²⁾	7557 ⁽²⁾	—	3/4" x 7'	—	—	—
5328 ⁽²⁾	5358 ⁽²⁾	7558	—	3/4" x 8'	—	—	—
—	5359 ⁽²⁾	7559	—	3/4" x 9'	—	400260998	400261038
—	5360	—	—	3/4" x 10'	—	—	—
5338 ⁽²⁾	5368 ⁽²⁾	7568	—	1" x 8'	—	—	—
—	5369	—	—	1" x 9'	—	—	—
5340 ⁽²⁾	5370 ⁽²⁾	7570	6440	1" x 10'	—	400261004	400261046
—	—	C2000028	—	1-1/4" x 8'	—	—	—
—	15129	7574	—	1-1/4" x 10'	—	400261012	400261053

(1) Galvanized rod and square nuts meet IEEE specification plus have polyethylene tube. No asphalt paint is added, so tube can slide down after anchor is expanded.

(2) IEEE standard.



Twineye

Tripleye

Expanding Rock Anchors

Saves Time, Labor and Money.

The CHANCE® Expanding Rock Anchor is a big time, labor and money saver, because in most cases, there is no need to mix concrete, melt lead or carry extra bulky equipment to the job. Generally, the cost of installing the Expanding Rock Anchor is about 35% less than the old-fashioned grouting method.

Expands and Wedges.

This anchor expands and wedges against solid walls of rock. And once it is expanded, the harder the pull on the rod, the tighter it wedges. Wedges are made of malleable or ductile iron with a rust-resistant coating. Rod should be in line with the guy.

1, 2 or 3 Guy Strands.

The large drop-forged Tripleye® rod of high-test steel holds up to three guy strands. The contour of the eye grooves keeps the guy strands from spreading, kinking and bending. And it allows slack to be pulled up without binding, damaging or weakening the guy.

Catalog Number	Rod Dia Inches	Rod Length Inches	Anchor Size Inches	Anchor Fully Expanded	Hole Size Inches	Approx Wt Per 100	Number in Bundle
R315	¾	15	1¾	2¾	2	500	5
R330	¾	30	1¾	2¾	2	700	5
R353	¾	53	1¾	2¾	2	960	5
R360	¾	60	1¾	2¾	2	1,040	5
R372	¾	72	1¾	2¾	2	1,200	4
R384	¾	84	1¾	2¾	2	1,300	4
R396	¾	96	1¾	2¾	2	1,460	3
R130L	1	30	2¼	3½	2½	1,166	3
R153L	1	53	2¼	3½	2½	1,833	3
R172L	1	72	2¼	3½	2½	2,133	2
R196L	1	96	2¼	3½	2½	2,666	2

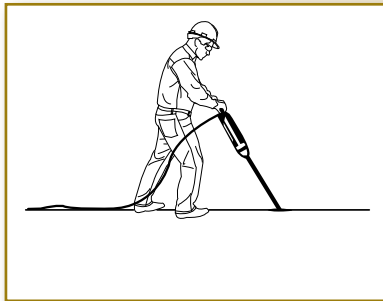
NOTE: ¾" rod minimum ultimate strength of 23,000 pounds.
1" rod minimum ultimate strength of 36,000 pounds. Ultimate strength ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength. Recommended minimum installation depth is 12" in solid rock. Rods and wedges are hot-dip galvanized.



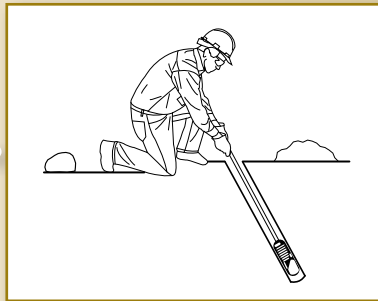
Expanding Rock Anchors *(continued)*

Installation is quick and simple.

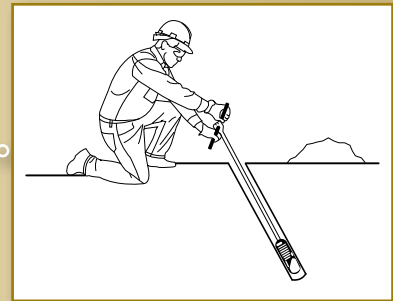
- Bore the hole with hand or power drill, making sure that the diameter of the hole is ¼-inch larger than the diameter of the unexpanded anchor.
- Drop the anchor in the hole. Put a bar through the large eye of the anchor rod.
- Turn the rod until the anchor is firmly expanded against the sides of the hole. Grouting should be done if protection of the rock against weathering is a concern.
- This wedging force holds the anchor securely in place to stay.



Bore hole



Drop anchor into hole



Turn rod to expand

EXTENDABLE ROCK ANCHOR

The CHANCE® Extendable Rock Anchor uses standard PISA® couplings and rods to install the rock anchor at depths greater than standard Expandable Rock Anchors (96"). For rods, couplings and eyenuts, see pages 9 - 10. Hot-dip galvanized.

Catalog Number	Rod Diameter Inches	Rod Length Inches	Standard Pkg/Pallet
R84LE	1	84	2/50



Grouted Rock Anchors

The CHANCE® Grouted Rock Anchor is designed to be used in situations where the soil is too rocky to use screw anchors, but the rock is fractured preventing the use of wedge style rock anchors. The forged knob on the end of the anchor along with any extension couplings provides the interference fit with the grout. The holding capacity of the anchor is dependent on the bond stress between the rock and the grout. The Grouted Rock Anchor is designed to be used inline with the guy. Failure to install within 5° of alignment with the guy load will significantly lower strength.

Installing a Grouted Rock Anchor requires first drilling a 6" diameter hole. Then insert the anchor, assembled with any Round Rod Extensions and Guy Adapter needed. Portland Cement grout pumped in to completely fill the hole around the anchor takes approximately 5 days to cure.

Grouted Rock Anchor – 1¼" Diameter Rod			
Catalog Number	Length A Inches	Approx Ship Wt Each lb	Standard Pkg/Pallet
W1040004	36	17.6	1/40
W1040055	84	38.0	1/30

Round Rod Extension – 1¼" Diameter Rod			
Catalog Number	Length A Inches	Approx Ship Wt Each lb	Standard Pkg/Pallet
12696	42	17.6	1/50
12697	60	38.0	1/50
12698	84	24.0	1/30
12699	120	46.8	1/50

NOTE: Galvanized per ASTM A-153. SS5 and SS150 extensions can be used in place of the RR extensions listed above.

Typical Assembly of Components as Installed

Grouted Rock Anchor

RR Extension

Guy Adapters

Thimbleye®
Cat Number C1020023

Twineye®
Cat Number C1020024

Tripleye®
Cat Number C1020025

Grouted Rock Anchors *(continued)*

Application Table for Catalog Numbers W1040004 and W1040055

Rock	Ultimate Bond Stress Between Rock & Grout psi ^{(1) (2) (3)}	Allowable Load Capacity for 6" Dia x 1' Long Grout Column lb/ft of Length ⁽⁴⁾
Granite	200	15,000
Basalt		
Dolomitic Limestone		
Soft Limestone	100	7,500
Slates & Hard Shales		
Sandstones		
Soft Shales	30	1,800
Soil ⁽⁵⁾	8	600
Class 5		

- (1) Ultimate bond stress values from the Post Tensioning Institute and the grout-to-ground bond values from the Federal Highway Administration were used to arrive at the indicated ultimate bond stress between rock and grout used in the above chart.
- (2) Identification of the rock and application of the chart values is the responsibility of those designing the rock anchor.
- (3) The values in the chart are intended to provide conservative results.
- (4) Higher bond stress values may be obtainable, but the associated investigation to determine appropriate values and the use of those values is left to those designing the rock anchor.
- (5) For recommendations concerning bonded lengths and unbonded lengths, reference the Post Tensioning Institute specifications.

NOTE:

- The given ultimate stresses were applied over the surface of a 6" diameter x 1' long grout column, then divided by 3 to obtain the recommended allowed load per foot of length in the indicated rock or soil.
- Actual capacities will depend on the strength of the rock, grout strength and quality of the installation.
- A rough surface in the drilled hole is preferred as well as a clean hole free of loose material, soil, dust, etc.
- A 6" diameter hole is recommended for the use of the W1040004 and W1040055 rock anchors.
- The minimum bond length of the rock anchor to be engaging the rock is 5 feet.
- It is recommended that field testing be accomplished to confirm capacities.
- Anchor grout is to be made using Type I, II, III, or V Portland Cement conforming to ASTM C-150 specifications.
- The compressive strength of the grout shall be 3000 psi at the time of stressing.
- Grout should be flowable to reach the bottom of the drilled hole or pumpable if it is to be placed via a grout pump.
- The ultimate mechanical strength of the W1040004 and W1040055 rock anchors and associated extensions and terminations is 70,000 lb when CHANCE/Hubbell anchor components are used.
- Water used in the grout mix should be potable (suitable for public consumption), clean and free of substances known to be harmful to portland cement or steel.
- It is recommended that grout be placed in the hole prior to inserting the rock anchor.
- When using pre-packaged grout mixes, follow the directions and use the water cement ratio recommended by the manufacturer.
- The rock anchor is to be installed in line with the guy wire. Any misalignment is to be no more than ± 5 degrees.

Expanding Pole Key Anchor

• Quicker Installing, More Efficient Than Wood Key



Closed

The CHANCE Pole Key can be used to reinforce poles in soft soils where the load is unbalanced and the pole must resist the load. However, it is recommended that Pole Keys only be used where a proper guy wire and guy anchor cannot be used, since a guy and anchor will generally provide more resistance to lateral movement. The Pole Keys will not withstand the same load, or perform as well a proper guy and anchor.

The CHANCE Pole Key can be installed next to the distribution pole butt to help hold it in place against light overturning loads such as service drops, prevailing winds or small line angles.

The additional lateral load and resulting overturning moment which can be resisted by Pole Keys depends on the height of the load, the locations of the Pole Keys, the allowable lateral deflection of the pole at ground line and the quality of the installation.

The % capacity increase shown in the table is based on analyses that used 2" lateral deflection at the ground line as the upper capacity limit.



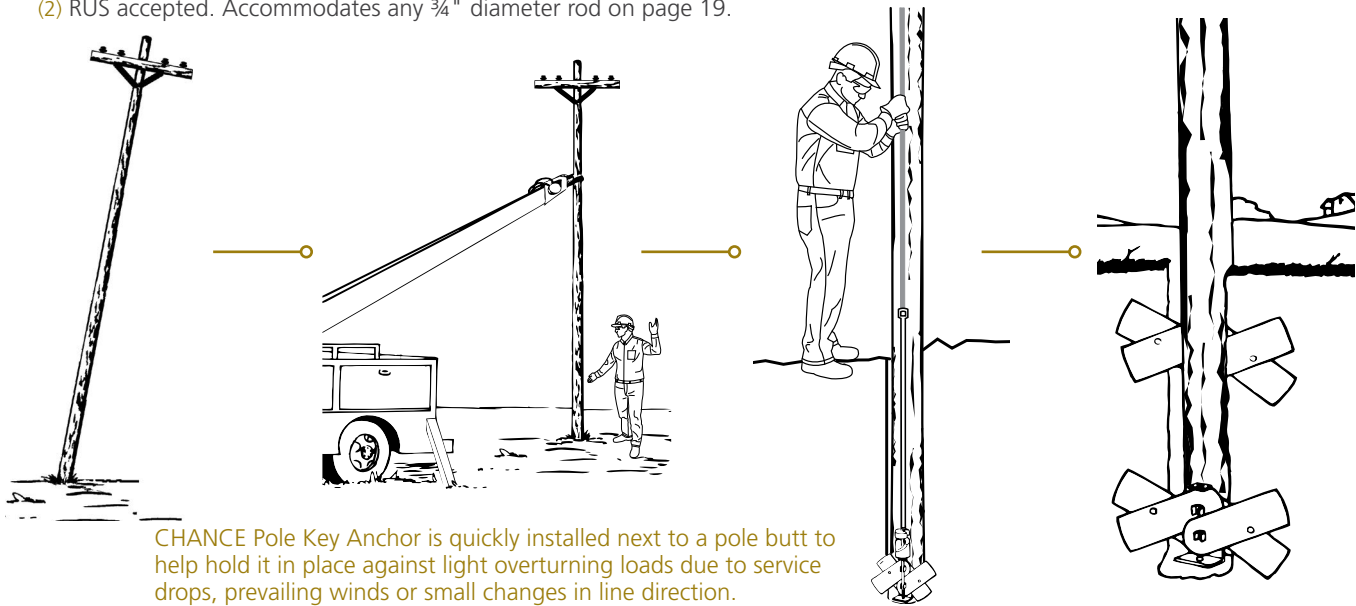
Expanded

Application and Ordering Information

Catalog Number	Width Expanded Inches	Blade Width Inches	Area Expanded sq in	Approx Ship Wt Each (lbs)	Pole Height and Class	% Capacity Increase by adding two Pole Keys
P4817 ⁽²⁾	27¼	7	276	24½	35' C15	30
					40' C14	24
					60' C13	13

(1) The lateral load and overturning moment, which can be resisted, depends on the height of the load above ground level, the depths of the two opposing pole keys, and the allowable lateral deflection of the pole at ground line.

(2) RUS accepted. Accommodates any ¾" diameter rod on page 19.



CHANCE Pole Key Anchor is quickly installed next to a pole butt to help hold it in place against light overturning loads due to service drops, prevailing winds or small changes in line direction.

Corrosion-Resistant Anchor

CHANCE® Design Offers Many Advantages.

The CHANCE Corrosion-Resistant Disc Anchor is designed for low resistivity, alkaline and acidic soils with electrolyte combinations. The anchor eye is forged directly to the rod, so the eye is an integral part of the anchor. The anchor's flanged cap nut is cast. It's large and heavy for greater protection. The heat-shrink sleeve over the galvanized anchor rod helps prevent moisture from going down the rod. The insulating washer is fiberglass-reinforced thermoset material for better load-bearing properties compared to thermoform materials.

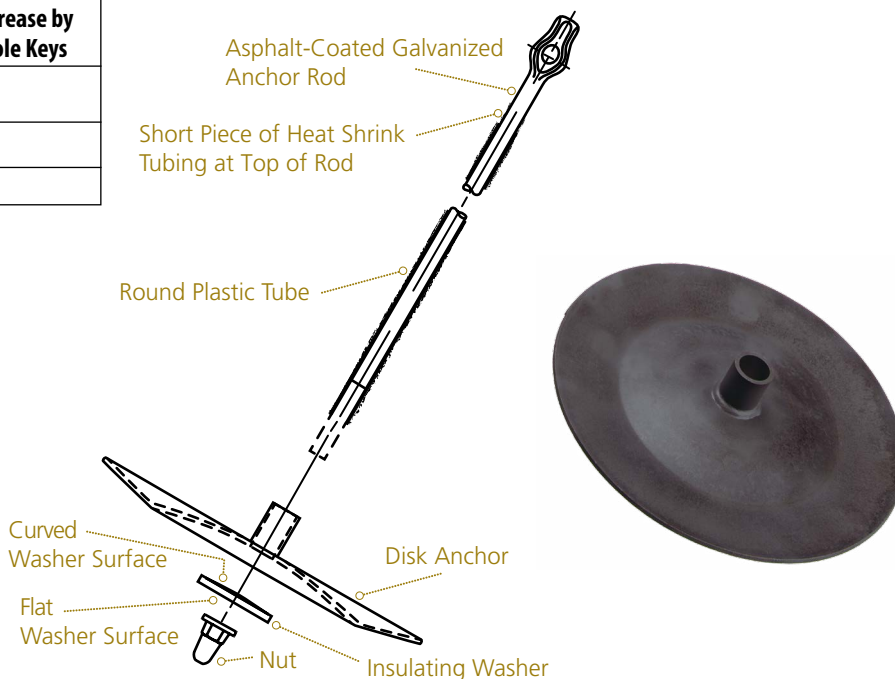
Corrosion-Resistant Anchor

Catalog Number	Description	Hole Size Inches	Fits Protected Rod Size Inches	Holding Capacity ⁽¹⁾ – lb (No Safety Factors Included) vs Soil Class				
				Class 3 500-600 in-lb	Class 4 400-500 in-lb	Class 5 300-400 in-lb	Class 6 200-300 in-lb	Class 7 100-200 in-lb
C1022008	16" Anchor .187" Thick	16	3/4	31,000 ⁽¹⁾	26,500 ⁽¹⁾	21,000	16,500	12,000
C1022009	16" Anchor .187" Thick	16	1	31,000 ⁽¹⁾	26,500	21,000	16,500	12,000
C1022011	20" Anchor .187" Thick	20	1	40,000 ⁽¹⁾	34,000	26,000	21,500	16,000
C1022012	20" Anchor .250" Thick	20	1	40,000 ⁽¹⁾	34,000	26,000	21,500	16,000
C1022054	24" Anchor .187" Thick	24	1	50,000 ⁽¹⁾	41,000 ⁽¹⁾	33,500	26,000	20,000
C1022050	24" Anchor .250" Thick	24	1	50,000 ⁽¹⁾	41,000 ⁽¹⁾	33,500	26,000	20,000
C1022381	30" Anchor .375" Thick	30	1 1/4	78,100	64,000	52,300	40,600	31,200

NOTE: Capacity ratings apply to properly installed anchors only. Failure to install within 5° of alignment with the guy load will significantly lower strength.

(1) Ultimate strength of rod may limit holding capacity.

Pole Height and Class	% Capacity Increase by adding two Pole Keys
35' Cl 5	30
40' Cl 4	24
60' Cl 3	13



Corrosion-Resistant Anchor *(continued)*

Fiber-Reinforced Washer		
Catalog Number	Fits Rod Size Inches	Approx Wt lb Per 100 Pcs
C2100033	¾	23
C2100034	1	19
C2100050	1-¼	30

Cap Nut		
Catalog Number	Fits Rod Size Inches	Approx Wt lb Per 100 Pcs
C2050407	¾	242
C2050408	1	242
C2050590	1-¼	300

These rods include fiber-reinforced washer and heavy-forged cap nut. Nut and washer is attached to rod.

Galvanized rod meets NEMA specification PH2 and has an asphalt coating, polyethylene tube and heat shrink collar. For additional sizes of rods, contact Hubbell Power Systems, Inc.

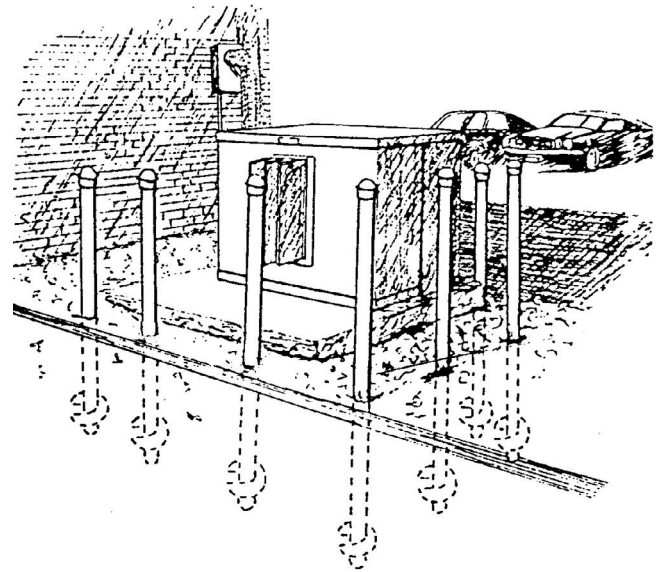
Protected Rod for Corrosion-Resistant Anchor							
Rod Size	Rod Tensile Strength lb	Thimbleye® Adapter		Twineye® Adapter		Tripleye® Adapter	
		Catalog Number	Lb Per 100 Pcs	Catalog Number	Lb Per 100 Pcs	Catalog Number	Lb Per 100 Pcs
¾" x 6'	23,000	C2000047	1,330	C2000053	1,362	C2000106	—
¾" x 7'	23,000	C2000048	1,450	C2000054	1,470	—	1,630
¾" x 8'	23,000	C2000049	1,566	C2000055	1,650	C2000061	1,783
¾" x 9'	23,000	—	—	C2000056	1,750	C2000062	1,883
¾" x 10'	23,000	C2000050	1,826	C2000057	1,910	—	—
1" x 7'	36,000	—	—	C2000114	—	—	—
1" x 8'	36,000	C2000051	2,500	C2000108	—	C2000063	2,730
1" x 9'	36,000	—	—	C2000058	2,800	—	—
1" x 10'	36,000	C2000052	3,005	C2000059	3,050	C2000064	3,270
1-¼" x 15'	58,000	—	—	C2000141	5,000	—	—
1-¼" x 15'	58,000	—	—	—	—	C2000140*	7,500

Bumper Posts

For Instant Equipment Protection

- Protect transformers, switchgear and guys.
- Any equipment needing bumper protection is an ideal candidate.
- Cheaper than concrete.
- Installation in minutes regardless of weather conditions.
- Available power diggers can install through blacktop surfaces.
- Hot-dip galvanized corrosion-resistant finish.

Power-Installed Design



INSTALLING TOOLS

- Additional tools may not be required for Bumper Post if Kelly Bar can be inserted into the 3.06" inside diameter of the post and pinned by a Bent Arm Pin.
- Tools are available which bolt directly to CHANCE® Kelly Bar Adapters or which can be used with CHANCE Locking Dog Assembly.
- Order catalog number C3030737 for Kelly Bar attachment or C3030739 for use with Locking Dog Assembly. Bumper Post is inserted into the drive tool and held by the provided Bent Arm Pin.

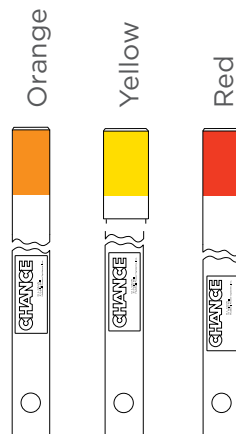
8,000 ft-lb Typical Working Torque

Catalog Number	Standard Pkg/Pallet	Weight Each lb	Description
T1120192	1/12	45	8" Helix, 3½" O.D. x 60" Shaft
T1120224	1/12	53	8" Helix, 3½" O.D. x 75" Shaft
C1120275	1/12	61	8" Helix, 3½" O.D. x 84" Shaft

AERIAL INSTALLATION

Inside and outside dimensions correspond to the color coded end of installing wrench.

Installing wrenches are color coded based on their dimensions and torque rating for easy identification in the field.



Standard and Hybrid PISA® Anchor Installing Tools

For Installing Torques up to 10,000 ft-lb

A complete tool system consists of: Kelly Bar Adapter, Torque Indicator, Locking Dog Assembly and Drive-End assembly. For instructions for selecting the proper Kelly Bar Adapter, see page 32.

Convertible to Extension Use

Extension assemblies can be added where soil conditions dictate that anchors be set more than one rod length deep or where digger to ground clearances are limited.

Each Standard Kelly Bar Adapter has six holes for ½" bolts on a 5¼" bolt circle and comes with six ½" Grade 5 bolts, nuts, lockwashers and Bent Arm Pin with Coil Lock.



Kelly Bar Adapter

Kelly Bar

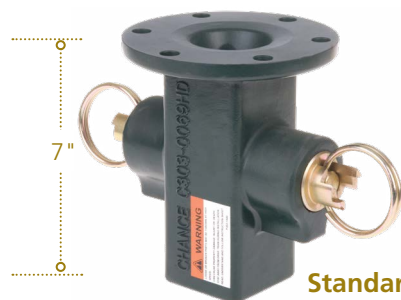
Standard Kelly Bar Adaptor with Bent Arm Pin

(5" Bolt Circle)

Part Number	Kelly Bar Shape	Kelly Bar Dimension			Wt Each lb
		X	Y	Z	
630013	Hex	2"	5'	6½"	10
630011HD	Hex	2½"	4¼"	8½"	18
630012HD	Hex	2¾"	4¼"	8½"	18

Bolt, Nut, Lockwasher

Part Number	Description
P0010259P	Hex Bolt
055371P	Lock Washer
055635P	Hex Nut



Standard Locking Dog Assembly C3030069HD

Standard Locking Dog Assembly has six holes for ½" bolts on a 5¼" bolt circle, comes with six ½" Grade 5 bolts, nuts and lockwashers.

Standard Locking Dog Assembly

Catalog Number	Description	Wt Each lb
C3030069HD	Complete Standard Locking Dog Assembly	20
C3030070	Locking Dog replacement Kit includes parts needed to replace both Locking Dogs	4
P1300007P	Replacement ring only	0.10

Standard and Hybrid PISA® Anchor Installing Tools *(continued)*

For Installing Torques up to 10,000 ft-lb

Transmits Torque to Anchor Core

The wrench transmits the torque from the Kelly Bar of the digger to the hub of the Power-Installed Screw Anchor so that the anchor rod need be only large enough in diameter to support the guy load.

7-ft Drive-End Wrench

Catalog Number	Description	Wt Each lb
C1021583	Standard Drive-End Wrench Installs 8,000 ft-lb (small-hub) Tough One® Anchors 10,000 ft-lb (small-hub) Tough One Anchors 4,000 ft-lb Standard-Strength PISA Anchors 6,000 ft-lb Mid-Strength PISA Anchors	57
C3031064 ^{(1) (2)}	Hybrid Drive-End Wrench Installs 10,000 ft-lb (large-hub) Tough One Anchors 6,000 ft-lb PISA 6 Anchors 7,000 ft-lb PISA 7 Anchors	64

3½-ft Drive-End Wrench

Catalog Number	Description	Wt Each lb
C1021595	Standard Drive-End Wrench Installs 8,000 ft-lb (small-hub) Tough One Anchors 10,000 ft-lb (small-hub) Tough One Anchors 4,000 ft-lb Standard-Strength PISA Anchors 6,000 ft-lb Mid-Strength PISA Anchors	29
C3031063 ^{(1) (2)}	HYBRID Drive-End Wrench Installs 10,000 ft-lb (large-hub) Tough One Anchors 6,000 ft-lb PISA 6 Anchors 7,000 ft-lb PISA 7 Anchors	28

Extension Wrench for Standard and Hybrid Drive-End Wrenches

Catalog Number	Description	Wt Each lb
630027	3½' ft Extension	42
630028	7' ft Extension	70

(1) These wrenches will fit 15,000 ft-lb Tough One Anchors dimensionally, but must not be used for torques in excess of 10,000 ft-lb.

(2) The old-style Hybrid wrenches C3031063 and C3031064, having a collar welded around the drive end, fit only PISA 6 and PISA 7 anchors.



Screw Anchor Drive Tool Strings

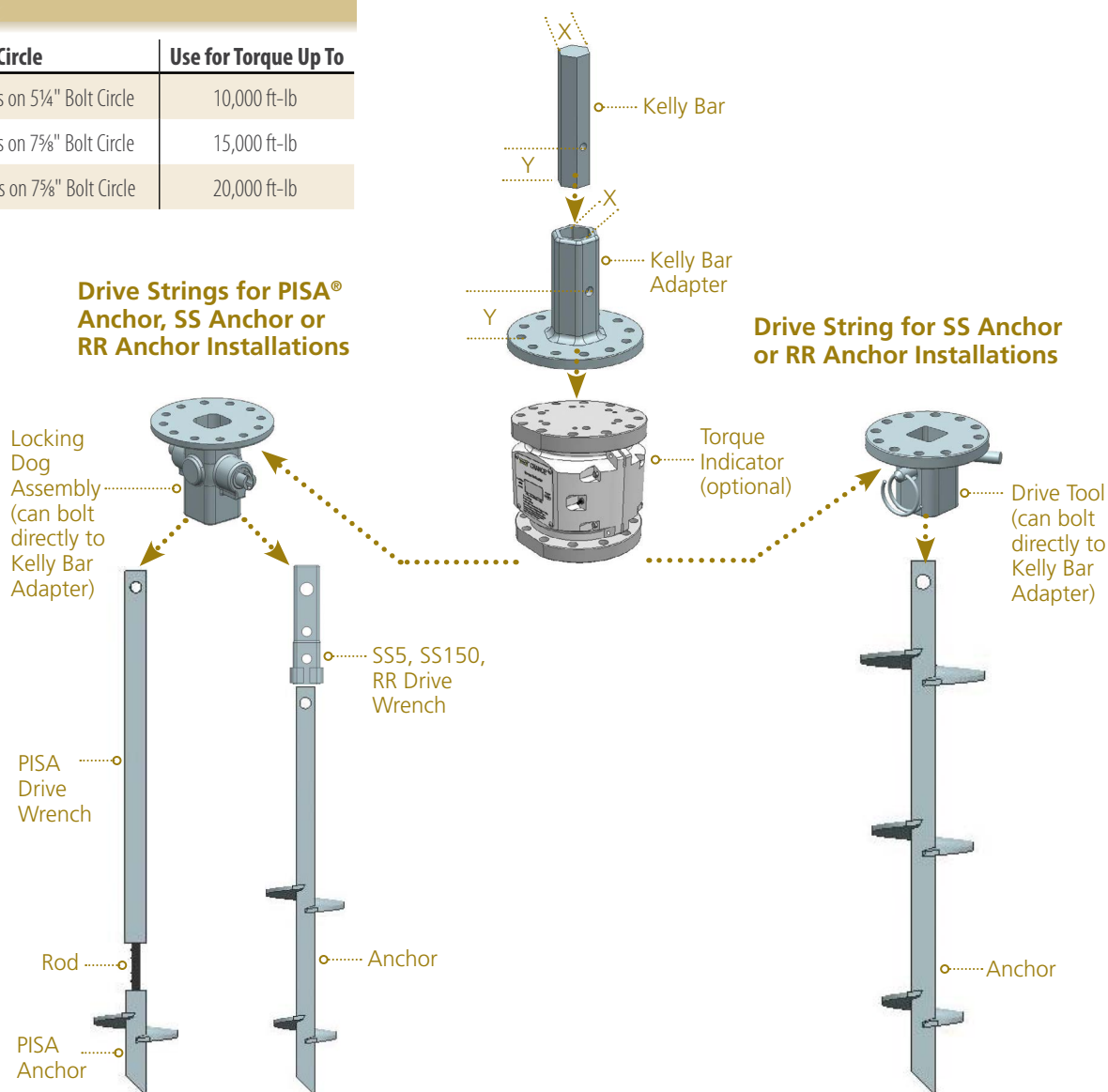
Selecting the correct Kelly Bar Adapter is key to building a successful Drive String. Follow these two easy steps:

1. Remove the auger from the digger and carefully measure the X and Y dimensions of the Kelly Bar.
2. Match the shape of the Kelly Bar and the X and Y dimensions with the Kelly Bar Adapter chart provided on pages 29-30 and 32-33. The Y dimension on the Kelly Bar Adapter must be equal to or greater than the Y dimension on the Kelly Bar itself.

BOLT CIRCLES

CHANCE® anchor installing tools are provided with appropriate bolt circles for the expected service. The torque limitations for the three standard bolt circles are given below. Never exceed the rated torque of any CHANCE installing tool.

Bolt Circle	Use for Torque Up To
(6) ½" Grade 5 Bolts on 5¼" Bolt Circle	10,000 ft-lb
(6) ⅝" Grade 2 Bolts on 7⅝" Bolt Circle	15,000 ft-lb
(12) ⅝" Grade 2 Bolts on 7⅝" Bolt Circle	20,000 ft-lb



Tough One® Anchor Installing Tools

A complete tool system consists of: Kelly Bar Adapter, Torque Indicator, Locking Dog Assembly and Drive-End Assembly. For instructions for selecting the proper Kelly Bar Adapter, see page 32.

Tough One Kelly Bar Adapter with Bent Arm Pin								
(7½" Bolt Circle)								
Part Number	Kelly Bar Shape	Torque Rating (ft-lb)	Kelly Bar Dimensions Inches			Wt lb	⅝" Grade 2 Bolts Included	Bent Arm Pin Included
			X	Y	Z			
C3030936	Hex	12,000	2½	3⅞	8¼	23	12	C3031223
C3030937	Hex	15,000	2⅝	3⅞	8¼	23	12	C3031223
C3030940	Hex	25,000	3	4½	8	27	12	C3031222
C3030955	Square	17,000	2½	4¾	7	22	12	C3031227
C3030958	Square	20,000	3	3½ & 2¼	7	23	12	C3031227
C3031571	Square	30,000	3½	2 & 4	6⅞	33	12	C3031227

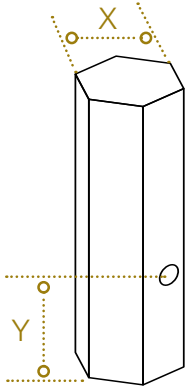
NOTE: Each Tough One Kelly Bar Adapter has twelve holes for ⅝" bolts on a 7½" bolt circle, comes with twelve ⅝" Grade 2 bolts, nuts & lockwashers and Bent Arm Pin with Coil Lock.

Digital Torque Indicator ⁽¹⁾			
Catalog Number	Torque Rating (ft-lb)	Description	Weight lb
C3031836	30,000	Torque Indicator adaptable to 5¼" BC or 7⅝" BC	65

(1) See pages 37 - 38 for additional information on Torque Indicators.



Kelly Bar Adapter



Kelly Bar



Torque Indicator

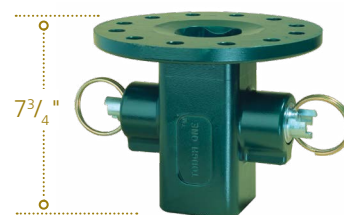
Tough One® Anchor Installing Tools *(continued)*

Tough One Locking Dog Assembly

Catalog Number	Description	Weight lb
C3030981	Complete Tough One Locking Dog Assembly	28
C3031026	Locking Dog Replacement Kit Includes all parts less casting, bolts, nuts, washers	5

NOTE: Tough One Locking Dog Assembly has twelve holes for $\frac{5}{8}$ " bolts on a $7\frac{5}{8}$ " bolt circle and comes with twelve $\frac{5}{8}$ " Grade 2 bolts, nuts and lockwashers.

Part Number	Description
056653P	Hex Bolt
055827P	Lock Washer
055803P	Hex Nut



Locking Dog Assembly

Tough One Drive-End Wrenches

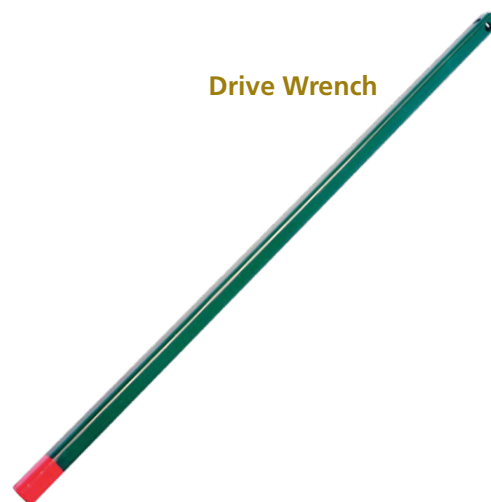
Catalog Number	Length ft	Description	Weight lb
C3030982	3½	Installs 15,000 ft-lb (large hub) Tough One anchors, 10,000 ft-lb (large hub) Tough One and all 1½" Core Anchors	36
C3030983	7		73

NOTE: Tough One Drive Ends are painted with a red band on the bottom.

Extension Assemblies for Tough One Drive-End Wrenches

Catalog Number	Length ft	Description	Weight lb
C3030987	3½	Extension attaches to drive-end wrench when additional depth is required	53
C3030988	7		89

NOTE: For SS and RR Anchor Tool options when using the Tough One Drive String System, see pages 34-35.



Drive Wrench

Anchor Installing Tool Bent Arm Pin with Coil Lock

Use with Standard and Tough One® Kelly Bar Adapters, SS, RR and Bumper Post Installing Tools

Each CHANCE® plated-steel Bent Arm Pin is designed to attach a Kelly Bar Adapter to a Kelly Bar, and to secure SS, RR and Bumper Post Anchors to Anchor Drive Tools.

Bent Arm Pins with Coil Locks are included with new tools as required. Order Pins and Coil Locks for existing tools as shown below.

Kelly Bar Adapter	Bent Arm Pin and Coil Lock Assembly	SS/RR Tools	Bent Arm Pin and Coil Lock Assembly
630010 ⁽¹⁾	C3031227	639001	C3031226
630011 ⁽¹⁾	C3031223	C3030195	C3031225
630011HD	C3031223	C3030201	C3031224
630012 ⁽¹⁾	C3031223	C3030202	C3031224
630012HD	C3031223	C3030020	C3031226
630013	C3031223		
630013A	C3031223		
630014	C3031222		
630015	C3031222		
630016	C3031227		
630017	C3031227		
C3030936	C3031223		
C3030937	C3031223		
C3030940	C3031222		
C3030955	C3031227		
C3030958	C3031227		
C3031571	C3031227		

Bumper Post Tools

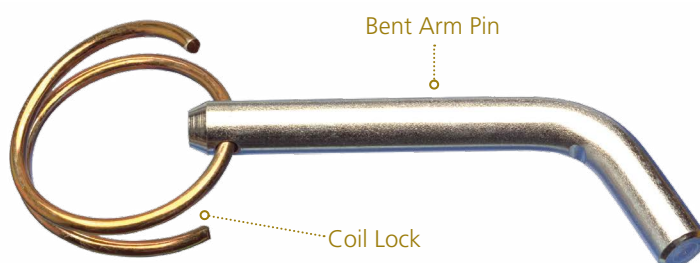
Bent Arm Pin and Coil Lock Assembly
C3030737
C3030739

(1) Old-style Kelly Bar Adapters are no longer available.



Bent Arm Pin and Coil Lock Assembly

Catalog Number	Size Inches
C3031226	3 x 5/8
C3031225	3 1/2 x 3/4
C3031224	4 1/2 x 1
C3031227	5 x 3/4
C3031223	4 1/2 x 1 1/2
C3031222	5 x 5/8



To order Coil Lock only, order Part Number P3031215P.

! WARNING

Always use the approved combination of Coil Locks and Bent Arm Pins. Never attempt to use any other combinations, such as hair pins, cotter keys, etc., with Bent Arm Pins.

! WARNING

CHANCE Bent Arm Pins with Coil Locks are the only tested and approved means for through-pin attachment of drive tools. Do not attempt to use any other means of attachment.

Adapters

For Torques up to 10,000 ft-lb

BOLT CIRCLE ADAPTERS

These adapters are used to connect two tools having incompatible bolt circles. The C3030115 is for use between two tools having tapped 5¼" bolt circles. The T3030166 is for use between a tool having a 5¼" bolt circle and one having a 7⅝" bolt circle. Both are limited to 10,000 ft-lb.

Catalog Number	Description	Approx Ship Wt Each (lbs)
C3030115	Bolt Circle Adapter with two ½" x 5¼" bolt circles	11
T3030166	Bolt Circle Adapter with one ½" x 5¼" bolt circle and one ⅝" x 7⅝" bolt circle	18



C3030115



T3030166

FOR INSTALLING SS OR RR ANCHORS

These Drive Tools require the appropriate Kelly Bar Adapter. Each comes with bolts, nuts and lockwashers.

Catalog Number	Description	Bolt Circle	Approx Wt lb
639001	SS5/SS150/RR Drive Tool	(6) ½" holes on 5¼" BC	7
C3030195 ⁽¹⁾	SS 175 Drive Tool	(12) ⅝" holes on 7⅝" BC	18
C3030201 ⁽¹⁾	SS200 Drive Tool	(12) ⅝" holes on 7⅝" BC	30
C3030202 ⁽¹⁾	SS225 Drive Tool	(12) ⅝" holes on 7⅝" BC	30

(1) Requires use of T3030166 adapter, and limited to 10,000 ft-lb when used with Standard Kelly Bar Adapter (with a 5¼" bolt circle).

Catalog Number	Description	Unit Fits	Approx Wt lb
C3030020	SS5/SS150/RR Drive Tool	Standard Locking Dog Assembly	8
C3031035	SS5/SS150/RR Drive Tool	Tough One® Locking Dog Assembly	11
T3031403	SS175 Drive Tool	Tough One Locking Dog Assembly	26
C3031077	SS 200 Drive Tool	Tough One Locking Dog Assembly	23

NOTE: These tools slide into Locking Dog Adapter and are retained by spring loaded dogs.

Catalog Number	Description	Bolt Circle	Approx Wt lb
C3031650	SS5/SS150 Drive Tool with Locking Dogs	(6) ½" holes on 5¼" BC	10
C3031645	SS175 Drive Tool with Locking Dogs	(12) ⅝" holes on 7⅝" BC	21



639001



C3030020



C3031650

CHANCE® Torque Indicator

DIGITAL TORQUE INDICATOR

Catalog Number C3031836

Avoid excessive torsional loading

Using the wireless CHANCE® Torque Indicator, you can install screw anchors to a pre-determined torque value, which gives a positive indication of anchor holding capacity in any soil type.

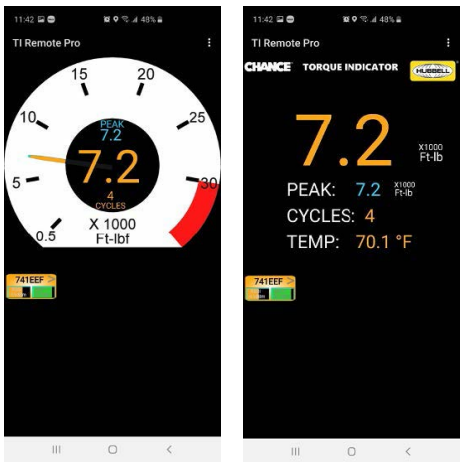
The Indicator mounts between the Kelly bar adapter and drive tool (or locking dog assembly). The LCD display is easy to read in full daylight and gives the operator a direct readout of installation torque at all times.

FEATURES & BENEFITS

- Measuring torque is the most accurate way to determine the capacity of helical piles and anchors
- Torque is displayed on Base Unit and transmitted via Bluetooth® to Android and iOS phones and smart devices
- Multiple Bluetooth display devices can be linked to Base Unit
- Download free Torque Indicator Remote Pro app from Apple App Store or Google Play Store
- Torque Indicator Remote Pro app allows torque readings to be sent via email to be downloaded
- Certificate of Calibration supplied with each new unit in case
- Operational temperature range: -30° to 70°C (-22° to 158° F)
- Measures torque up to 30,000 ft-lb
- Accuracy: ±500ft-lb at any reading
- Torque is measured using strain gauges mounted inside the Base Unit.
- No shear pins to replace
- Powered by two standard 9V batteries
- Solid one-piece spool design to withstand most bending loads.
- Top and bottom flange, each provides six holes tapped ½"-13 on a 5-¼" bolt circle and twelve holes tapped 5/8"-11 on a 7-5/8" bolt circle.
- Supplied with Twelve (12) 1/2 - 13 UNC - 2A bolts, 1 3/4" long, grade 5, with lock washers and Twenty-four (24) 5/8 - 11 UNC - 2A bolts, 2" long, grade 5, with lock washers.



Base Unit



Digital Display

Catalog Number	Description
C3031836	Digital Torque Indicator

CHANCE® Torque Indicators

FOR INSTALLING NO-WRENCH ANCHOR AND MANUAL FOUNDATION TOOL

Designed for use with the CHANCE® Portable Anchor Installer. This tool bolts directly to the installer's output flange or Kelly Bar Adapter having six ½" diameter holes on a 5¼" bolt circle. Adjustable pivoting plates accept rods from ¾" to 1¼" diameter.

For manually-installed foundations, eyenut must be temporarily installed for installation. Has four holes on 5¼" bolt circle for attachment. Includes four ½" x 1½" bolts, nuts and lock washers.



E3030255

Catalog Number	Weight lb
E3030255	9

SHEAR PIN TORQUE LIMITER

Catalog Number C3030044 for Installing Torques up to 10,000 ft-lb

- Protection for anchors and installing tools by disconnecting the power when the installing torque reaches a preselected level.
- Useable in very rocky soil.
- Durable – does not require special storage or handling.
- Top and bottom each has six holes tapped ½"-13 on a 5¼" bolt circle.



C3030044

Catalog Number	Description	Wt lb
C3030044	Shear Pin Torque Indicator	54
C3030045 ⁽¹⁾	One Carton of Shear Pins (approx 1700 pins)	50
T3031420 ⁽¹⁾	One Box of Shear Pins (approx 510 pins)	15

(1) Each Shear Pin provides 500 ft-lb of torque.



C3030045

Soil Test Probe

Determine Soil Conditions Without Taking Core Samples

The CHANCE® Soil Test Probe is a mechanical instrument which enables the operator to determine the condition of the sub-soil without core samples. A ratchet-handle torque wrench which slides up and down on the shaft is used to install or retract the probe. Torque wrench readings, in inch-pounds, provide a way to measure the consistency of the sub-soil. The torque values obtained are translated into soil classifications using the copyrighted CHANCE Soil Classification Table (below) located on the inside flap of the carrying case.

Torque readings are taken at the depth to which an anchor is to be installed, and at least 2 feet above this depth because the average earth consistency 2 to 3 feet above the anchor determines the anchor holding capacity. The probe shaft is marked at 1-foot intervals permitting soil evaluation at every foot of depth.

The length of the Soil Test Probe (including helix) is 5 feet. Each shaft coupled to the probe provides an additional 5 feet. A durable carrying case protects the equipment when not in use.



Soil Test Probe 1800 In-lb Capacity

Catalog Number	Description	Length ft	Weight lb
C3090032	Probe with 3 5-ft Extensions	20	27½

Accessories

Catalog Number	Description	Weight lb
C3090033	5-ft Extension Only	3

Soil Classification Data

Class	Common Soil-Type Description	Geological Soil Classification	Probe Values ft-lb (nm)	Typical Blow Count "N" per ASTM-D1586
—	Sound hard rock, unweathered (bedrock)	Granite, Basalt, Massive Limestone	—	—
1	Very dense and/or cemented sands: coarse gravel and cobbles	Caliche (Nitrate-bearing gravel/rock)	over 60 (85 - 181)	60 - 100+
2	Dense fine sands; very hard silts and clays (may be preloaded)	Basal till; boulder clay; caliche; weathered laminated rock	over 50 (68 - 85)	45 - 60
3	Dense sands and gravel; hard silts and clays	Glacial till; weathered shales, schist, gneiss and siltstone	42 - 50 (56 - 68)	35 - 50
4	Medium dense sand and gravel; very stiff to hard silts and clays	Glacial till; hardpan; marls	33 - 42 (45 - 56)	24 - 40
5	Medium dense coarse sands and sandy gravels; stiff to very hard silts and clays	Saprolites, residual soils	25 - 33 (34 - 45)	14 - 25
6	Loose to medium dense fine to coarse sands to stiff clays and silts	Dense hydraulic fill; compacted fill; residual soils	17 - 25 (23 - 34)	7 - 14
7 ⁽¹⁾	Loose fine sands; Alluvium; loess; medium to stiff and varied clays; fills	Flood plain soils; lake clays; adobe; gumbo, fill	8 - 17 (11 - 23)	4 - 8
8 ⁽¹⁾	Peat, organic silts; inundated silts; fly ash; very loose sands; very soft to soft clays	Miscellaneous fill, swamp marsh	under 8 (0 - 11)	0 - 5

NOTE: Class 1 soils are difficult to probe consistently and the ASTM blow count may be of questionable value.

⁽¹⁾ It is advisable to install anchors deep enough, by the use of extensions, to penetrate a Class 5 or 6, underlying the Class 7 or 8 Soils.

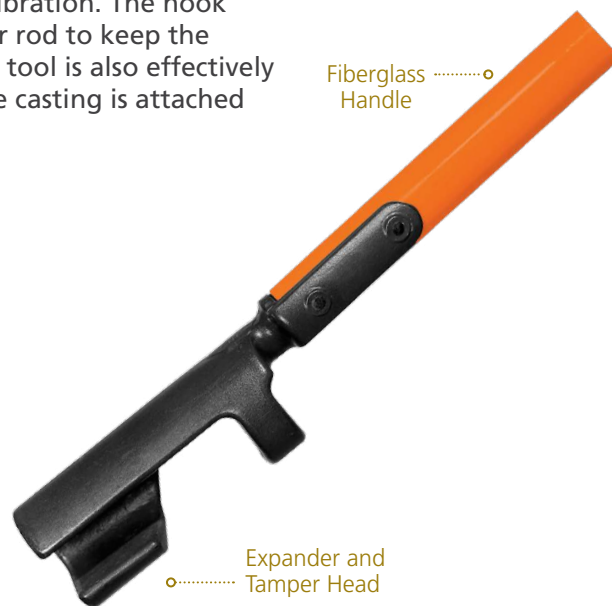
Expanding & Tamping Bar

AERIAL
INSTALLATION

The CHANCE® fiberglass handle Expanding and Tamping Bar simplifies the job of expanding anchors. The curved expander and tamper head distributes the weight of the bar evenly around the anchor rod to reduce handle vibration. The hook of the Expanding and Tamping Bar wraps around the anchor rod to keep the expanding head from slipping off the anchor top plate. This tool is also effectively used for tamping in soil above the installed anchor. The base casting is attached directly to the fiberglass handle.

Catalog Number	Description	Length ft	Weight lb
C3020003	Expanding & Tamping Bar	10	22
C3020004	Expanding & Tamping Bar	12	24
E3020001P ⁽¹⁾	Fiberglass Handle	10	7
E3020006P ⁽¹⁾	Fiberglass Handle	12	8
P3020002P	Expander and Tamper Head	—	14

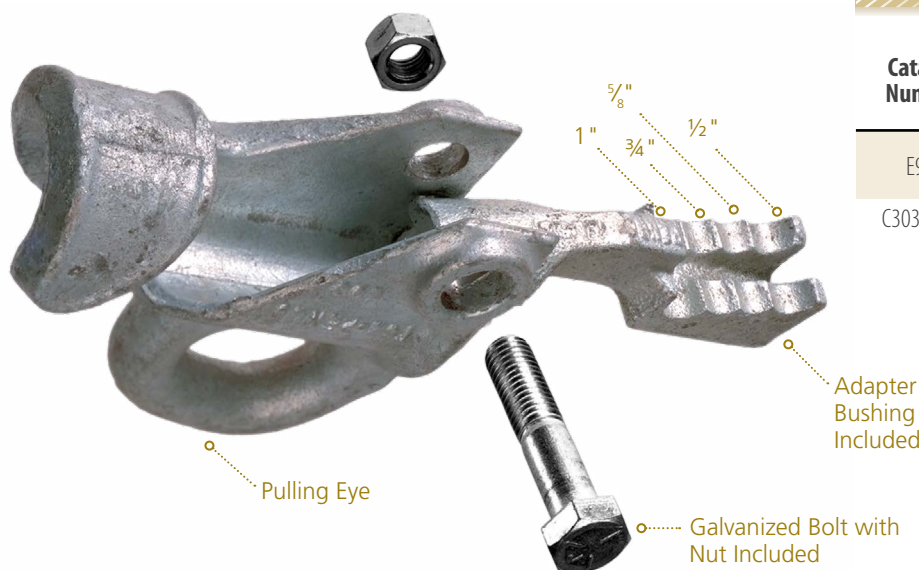
(1) Includes plug mix to reset handle.



Standard Pulling Eye

This inexpensive cost-cutter provides a large offset eye to accommodate three-ton chain hoist hooks, and leaves the anchor eye free with plenty of clearances for attaching formed wire grips. By removing the adapter bushing, the E96 Pulling Eye fits 1¼" rods. The E96 Pulling Eye is inexpensive and easy to use. One person can assemble and hook up in minutes. For working loads to approximately 6,000 pounds (ultimate strength – 18,000 pounds).

Catalog Number	Description	Approx Ship Wt Each (lbs)
E96	Entire assembly – Pulling Eye, Bolt, Nut, Gripper	5
C3031661	Replacement Bolt, Nut, Gripper for E96	1.6



No. C3031661



Portable Anchor Installers for Small Foundations

2,500 ft-lb Torque Capacity Hydraulic Power Drive

Economical Manual Operation and Portability for Remote Sites, Common Anchor Installations.

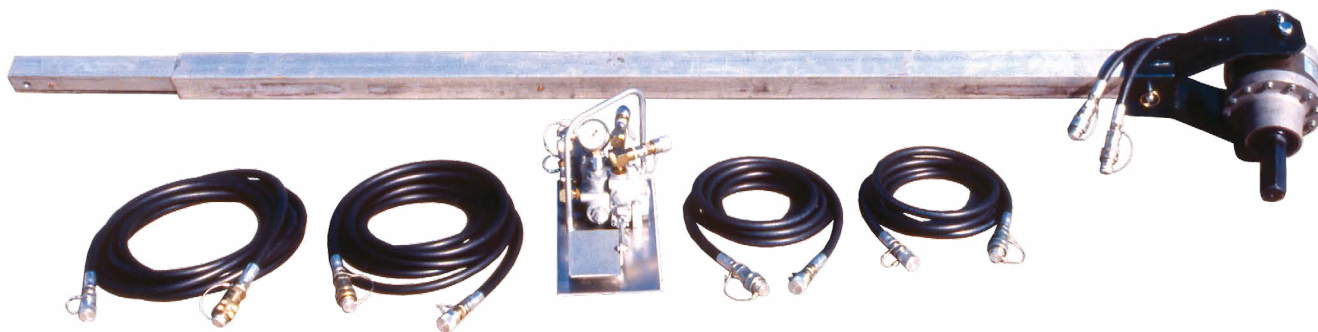
For most shaft-driven guy anchors and smaller screw foundations, these compact drivers get into areas where large equipment cannot go or is impractical. Operator does not need to resist the torque generated by anchor installation. Countertorque transmits through a torque bar from the drive head to the earth or other restraint. This frees the operator for the task of guiding the anchor path.

- Built-in bypass valve limits output to 2,500 ft-lb maximum.
- Two-way foot pedal gives operator direct control over drive and reverse directions.
- Hoses (two 12-ft and two 25-ft) come with quick couplers for all connections from power supply to foot control to drive head.
- Pivoting drive-head yoke connects with Bent Arm Pin to square-tubular torque bar which telescopes from 8 feet to 10 feet as needed.



Catalog Number C3031032

Medium-Duty Installer requires 1550 psi at 8 gpm flow rate to deliver 2,500 ft-lb maximum torque.



Catalog Number C3031244

Heavy-Duty Installer requires 1,900 psi at 8 gpm flow rate to deliver 2,500 ft-lb maximum torque.

2,500 ft-lb Portable Anchor Installers

Medium-Duty^(†) – Catalog Number C3031032

Grease-filled gear case. Single catalog number above includes all items below. Each item also may be ordered by separate number.

Hydraulic Control Valve ⁽¹⁾	C3031031
Two 25-ft. Hydraulic Hoses	C4176121 (each)
Hydraulic Drive Head ⁽¹⁾	C3031180
Yoke Assembly	E3030680
Two 12-ft. Hydraulic Hoses ⁽¹⁾	E3030876 (pair)
Square Torque Bar Assembly	E3031041

NOTE: Output shaft is 1½" square socket. Requires C3031230 and flanged drive tool (order separately) to install anchors other than 1½" square 1¼" round shaft.

(1) Hydraulic components are not interchangeable between C3031032 and C3031244.

Heavy-Duty – Catalog Number C3031244

Sealed oil-filled gear case. Single catalog number above includes all items below. Each item also may be ordered by separate number.

Hydraulic Control Valve ⁽¹⁾	C3031247
Two 25-ft. Hydraulic Hoses	C4176121 (each)
Hydraulic Drive Head ⁽¹⁾	C3031233
Yoke Assembly	E3030680
Two 12-ft. Hydraulic Hoses ⁽¹⁾	E3031253 (pair)
Square Torque Bar Assembly	E3031041

NOTE: Output shaft is 2" Hex. – Requires Kelly Bar Adapter and flanged drive tool (order separately) to install all anchors.

(1) Hydraulic components are not interchangeable between C3031032 and C3031244.

**Adapter Tool
Catalog Number
C3031230**



ANCHOR DRIVE TOOLS

(†) All 5¼" bolt-circle tools may be connected directly to Heavy Duty Portable Anchor Installer Catalog Number C3031244. Adapter Tool Catalog Number C3031230 is required to connect 5¼" bolt-circle tools to Medium-Duty Portable Anchor Installer Catalog Number C3031032. If needed, order Adapter C3031230 as a separate item.

OPTIONAL HYDRAULIC POWER UNIT CATALOG NUMBER C3031201

For easy wheeling to worksite, hydraulic drive head and foot control are secured by a rubber strap. Unit includes two angle braces atop the cart frame. Hoses may ride on the handles.

Cart-mounted on 5/8" diameter axle with two 4.8" x 8" inflatable (30 psi) tires; 27¼" wide x 34½" high x 36" long; shipping weight with oil: 275 lb.

Operating instructions are included with anchor installer and hydraulic power unit.

Hydraulic Pump with Fan Cooling System:

- Typical output pressure — 2500 psi
- Pump displacement — 8 gpm @ 3400 rpm
- Reservoir capacity — 5 gallons US
- Shipping cap and vented fill cap provided

Gasoline Engine System:

- 16 hp Briggs & Stratton
- Industrial/Commercial Model 326437, Type 2527
- 12-Volt push-button start, 3600 rpm (maximum)

Drive head and foot control shown in photo are not included with C3031201





Pole Line Hardware

When support and timeliness count, Hubbell Power Systems delivers the product breadth and hardware solutions you need to make your complex project more manageable and cost efficient. Constructed to deliver the reliability you depend on from the name you know and trust, our aerial pole product offering utilizes the latest technologies in manufacturing.

From aerial to burial, HPS products provide both innovative and cost-effective solutions for telecommunication and utility providers.

Banding, for Pole Attachments

A no-drilling way to attach components to a pole of any size or shape.

- Attaches to steel, concrete, composite or wood poles of any shape and size.
- Easily installs with standard hand tools
- Adjustable for any sized pole
- Can be cut to length at installation or ordered in pre-cut lengths

Material

- Fittings - Aluminum 6061-T6
- Bands - 201 Stainless steel bands with 95,000 P.S.I. min. tensile and 45,000 P.S.I. min. yield
- Bolt - Galvanized steel per ASTM A-153

When determining band length, add 6" to the circumference of the structure.



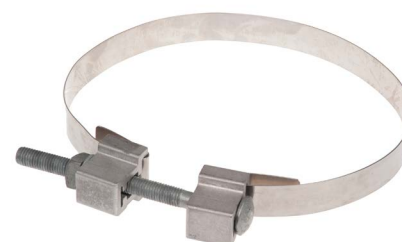
Assembled band with clamp

Stainless Steel Band Kits

Standard Lengths, includes band, clamps, and 5/8 x 7 1/2" carriage bolt.

Catalog Number	Band Width (in)	Length (in)	Approx Ship Wt Each (lbs)	Clamp Catalog No.
CBAB3836	3/4	36	2	CBAB38
CBAB3840	3/4	40	2	CBAB38
CBAB3848	3/4	48	2	CBAB38
CBAB3860	3/4	60	2	CBAB38
CBAB3872	3/4	72	2	CBAB38
CBAB3884	3/4	84	2	CBAB38
CBAB5836	1 1/4	36	3	CBAB58
CBAB5840	1 1/4	40	3	CBAB58
CBAB5848	1 1/4	48	3	CBAB58
CBAB5860	1 1/4	60	3	CBAB58
CBAB5872	1 1/4	72	3	CBAB58
CBAB5884	1 1/4	84	3	CBAB58
CBAB58132	1 1/4	132	3.5	CBAB58
CBAB58180	1 1/4	180	5.4	CBAB58

Kits contains band, clamps, and 5/8 x 7-1/2" carriage bolt



Band Clamps

Catalog Number	Band Width (in)	Approx Ship Wt Each (lbs)
CBAB38	3/4	8
CBAB58	1 1/4	20

Stainless Steel Bands - 100' Coils

Catalog Number	Band Width (in)	Thickness (in)	Length (ft)	Approx Ship Wt Each (lbs)	Buckle Catalog No.
C12201SSB100	1/2	.03	100	5.3	PSC2080557
C58201SSB100	5/8	.03	100	6.0	PSC2080558
C34201SSB100	3/4	.03	100	7.8	CBAB38
C34201SSB100G	3/4	.04	100	8.0	PSC2080560
C100201SSB100	1	.04	100	14.5	PSC2080561
C114201SSB100	1 1/4	.04	100	21.1	CBAB58

NOTE: Order quantity 1 for 100' coil

Buckles for Bands

Catalog Number	Band Width (in)	Type	Use with banding	Approx Ship Wt Each (lbs)
PSC2080557	1/2	Standard	C12201SSB100	0.02
PSC2080558	5/8	Standard	C12201SSB100	0.03
PSC2080559	3/4	Standard	C12201SSB100	0.04
PSC2080560	3/4	Heavy Duty	C34201SSB100G	0.04
PSC2080561	1	Heavy Duty	C34201SSB100G	0.10
PSC2080562	1 1/4	Heavy Duty	C34201SSB100G	0.14

General Purpose Mounting Brackets

Catalog Number	Description	Band Width	Approx Ship Wt Each (lbs)
CHDBB1511H	Bracket with standard 5/8" x 2" bolt	3/4"	.65
CHDBB1511H3H	Bracket with Grade 5, 5/8" x 3 bolt	3/4"	.7
CD4080	Heavy duty galvanized steel bracket	1-1/4"	2.3

CHDBB1511H or CHDBB1511H3H



No. PSC2080557

Banding, for Pole Attachments

GALVANIZED POLE BANDS

3/16" x 4" flat steel bands, shipped assembled with one 3/4" x 4" curved bolt and one 3/4" x 2 1/2" cone head bolt (PS6280). Hot dip galvanized.

Catalog Number	Fits pole circumference (in)	Approx Ship Wt Each (lbs)
6276	6 to 10	10.67
6277	8 to 14	11.72



Pole Band, No. 6276

POLE BAND GUY CLIP

Guy clips, two piece. Top piece is 5/16" x 2 1/2", bottom is 3/16" x 2 1/2". A 3/4" x 2 1/2" machine bolt with cotter pin fastens thimble.

ORDERING INFORMATION:

Hubbell Catalog No. 6278



Pole Band, No. 6278

LASHING STRAP KIT

Kit of (5) 50' reels of plastic lashing strap and (150) plastic buckles to secure messenger strand to communication cables. Loop strength 250 lbs. Buckles are black acetal plastic with stainless steel locking bars.

Ordering Information:

- Kit: Hubbell Catalog No. C550B150PLLC
- Buckle only: Hubbell Catalog No. CBPLLC



Lashing Kit, No. C550B150PLLC

STAINLESS STEEL LASHING STRAP

3/4" wide, 430 stainless steel. For part numbers with buckles, buckles are black acetal plastic with stainless steel locking bars. Additional can be ordered with Hubbell Catalog No. CBPLLC.



Lashing Strap with Buckle

Catalog Number	Length (in)	Buckles Included
C50PLLC	600 (50 ft reel)	No
C78SSLC	78	No
C66SSLC	66	No
C50SSLC	50	No
C45SSLC	45	No
C34SSLC	34	No
C28SSLC	28	No
C27PLLC	27	Yes
C22SSLC	22	No
C16PLLC	16	Yes
C16SSLC	16	No
C13PLLC	13	Yes
C10PLLC	10	Yes
C10SSLC	10	No

Bolts

BOLT, CABLE EXTENSION

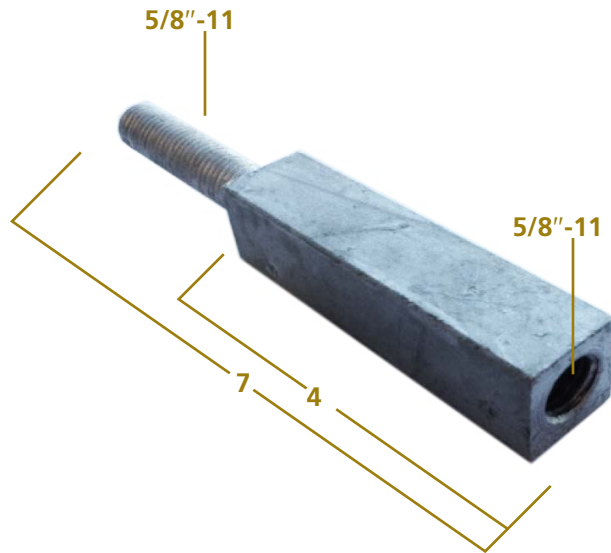
Creates a second cable run at the same level on the same side of the pole as an existing cable run with a 4" extension. Used in conjunction with Reinforcing Strap (PSC2080241) on page A72.

FEATURES

- 5/8" - 11 Thread (Internal and External)
- Stand-off segment 4" x 1" Sq.
- Overall length 7"
- Meets Bellcore 627-0005

MATERIAL

- Steel
- Galvanized per ASTM A-153



Hubbell SKU	Internal Thread	External Thread	Overall Length	Extension Length	Approx. Ship Wt. per each
PSC2080292	5/8"-11	5/8"-11	7"	4"	1.1 lbs.

CARRIAGE BOLTS

Carriage Bolts have square nuts, finished points and rolled threads. Standard heads have square shoulders. Open-hearth steel. Hot-dip galvanized.

3/8-Inch Diameter			
Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Bolt Length	Thread Length	
8634 ⁽¹⁾⁽²⁾	4	1¾	0.16
863412 ⁽¹⁾⁽²⁾	4½	1¾	0.17
8635 ⁽¹⁾⁽²⁾	5	1¾	0.18
8636 ⁽¹⁾	6	1¾	0.20
8637	7	1¾	0.22
400012548 ⁽¹⁾	8	4	0.27
400012555 ⁽¹⁾	10	4	0.30
400012563 ⁽¹⁾	12	4	0.35

NOTE: 4,250 lb rated tensile strength.

(1) RUS listed.

(2) ANSI C135.1.

½-Inch Diameter			
Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Bolt Length	Thread Length	
864412 ⁽¹⁾	4½	3	0.32
400012589 ⁽¹⁾	4¾	3	0.35
8645 ⁽¹⁾⁽²⁾	5	3	0.33
864512 ⁽¹⁾	5½	3	0.38
8646 ⁽¹⁾⁽²⁾	6	3	0.39
8647	7	4	0.44

NOTE: 7,800 lb rated tensile strength.

(1) RUS listed.

(2) ANSI C135.1.



No. 561127

Bolts

CLEVIS BOLTS

For deadend attachments strings. Cotter bolt is 2¾" long and comes with cotter pin and hex nut. Clevis Bolts are drop-forged steel. Hot-dip galvanized.

Catalog Number	Dimensions Inches						Approx Ship Wt Each (lbs)
	A	B	C	D	E	Thread Length	
15808 ⁽¹⁾	8	5/8	13/16	1/2	1 13/16	6	1.50
15810 ⁽¹⁾	10	5/8	13/16	1/2	1 13/16	6	1.99
15812 ⁽¹⁾	12	5/8	13/16	1/2	1 13/16	6	2.17
15814 ⁽¹⁾	14	5/8	13/16	1/2	1 13/16	6	2.20
15828 ⁽¹⁾	8	3/4	13/16	5/8	1 13/16	6	2.00
15830 ⁽¹⁾	10	3/4	13/16	5/8	1 13/16	6	2.57
15832 ⁽¹⁾	12	3/4	13/16	5/8	1 13/16	6	2.80
15834 ⁽¹⁾	14	3/4	13/16	5/8	1 13/16	6	3.04

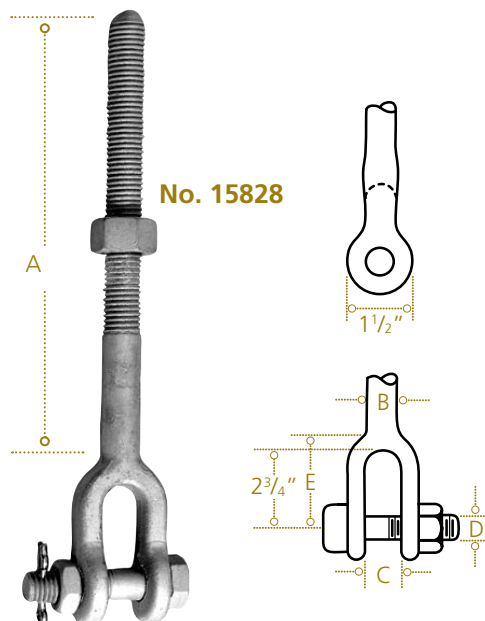
NOTE: 5/8" bolt has 12,400 lb rated tensile strength. 3/4" bolt has 18,350 lb rated tensile strength.

(1) RUS listed.

CONE HEAD BOLTS

For use on universal pole bands. Includes one square nut and cotter key. For use on universal pole bands 6276 and 6277. Galvanized per ASTM A-153.

Catalog Number	Diameter	Thread Length	Overall Length Inches	Approx. Ship Wt. per each
PS6280	3/4"	Full	2 1/2	0.50 lbs.



No. PS6280

Bolts

DOUBLE-ARMING EYE BOLT

Bolts have a cone type point and are threaded to within 2" of the 1½" x 2" eye. Three square nuts. Drop-forged steel. Hot-dip galvanized.

½-Inch Diameter

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Inside Dimension A	Outside Dimension B	Length Under Eye C	
19784 ⁽¹⁾	1½	2½	14	1.96
19786 ⁽¹⁾	1½	2½	16	2.20
19788 ⁽¹⁾	1½	2½	18	2.32
19790 ⁽¹⁾	1½	2½	20	2.56
19792 ⁽¹⁾	1½	2½	22	2.60

NOTE: 12,400 lb rated tensile strength.

(1) RUS listed.

DOUBLE-ARMING BOLTS, ALL-THREAD RODS CABLE B SUSPENSION BOLTS

Referred to as "D.A. bolts," Double-Arming Bolts are used for double-arm applications (one arm on each side of the pole). Hubbell Power Systems D.A. Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1. They are available in a range of thread diameters and lengths. Each bolt includes four assembled square nuts. Threads are formed with the rolled thread process. Bolt length is measured from the last thread, end to end. Semi-cone point comes on bolts 8" and longer in ½", ⅝" and ¾" diameters. All others have chamfered or rounded ends.



½" Thread Diameter (½-13 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
8846	16	1.17
8848	18	1.25

NOTE: 7,800 lb rated tensile strength.

⅝" Thread Diameter (⅝-11 UNC)

Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
8860	10	1.17
8862 ^{(1) (2)}	12	1.26
8864 ^{(1) (2)}	14	1.48
8866 ^{(1) (2)}	16	1.70
8868 ^{(1) (2)}	18	1.80
8870 ^{(1) (2)}	20	1.97
8872 ^{(1) (2)}	22	2.13
8874 ^{(1) (2)}	24	2.27
8876	26	2.40
8877	28	2.53
8878	30	2.67
8879	32	2.80
T2060419 ⁽¹⁾	36	3.30
PSDA584000 ⁽¹⁾	40	3.50
PSDA584400	44	3.60
PSDA588400 ⁽¹⁾	84	6.80

NOTE: 12,400 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C135.1.



Bolts

DOUBLE-ARMING BOLTS, ALL-THREAD RODS (continued) CABLE B SUSPENSION BOLTS

¾" Thread Diameter (¾-10 UNC)		
Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
C2050140	6	1.28
C2050141	8	1.50
400013843	10	1.70
8882 ⁽²⁾	12	1.82
8884 ⁽²⁾	14	2.24
8886 ⁽²⁾	16	2.48
8888 ⁽²⁾	18	2.72
8890 ^{(1) (2)}	20	2.92
8892 ^{(1) (2)}	22	3.16
8894 ^{(1) (2)}	24	3.35
8896	26	3.56
8897	28	3.65
8898	30	3.81
889832	32	4.13
PS889834	34	4.34
PS889836	36	4.50
PS889838	38	4.82
PS889840	40	5.10
PS889842	42	5.41

NOTE: 18,350 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C-135.1.

7/8" Thread Diameter (7/8-9 UNC)		
Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
PSDA781200	12	2.83
PSDA781400	14	3.12
PSDA781600	16	3.41
PSDA781800	18	3.70
PSDA782000	20	3.99
PSDA782200	22	4.27
PSDA782400	24	4.56
PSDA782600	26	4.85
PSDA782800	28	5.14
PSDA783000	30	5.43
PSDA783200	32	5.72
PSDA783400	34	6.01
PSDA783600	36	6.30
PSDA783800	38	6.59
PSDA784000	40	6.88
PSDA784200	42	7.17
PSDA784400 ⁽²⁾	44	7.40
PSDA784600 ⁽²⁾	46	7.63
PSDA784800 ⁽²⁾	48	8.00
PSDA785000 ⁽²⁾	50	8.23

NOTE: 24,500 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

(2) ANSI standard, C-135.1.

1" Thread Diameter (1-8 UNC)		
Catalog Number	Length Inches	Approx Ship Wt Each (lbs)
PSDA101200 ⁽²⁾	12	4.00
PSDA101400 ⁽²⁾	14	4.35
PSDA101600 ⁽²⁾	16	4.72
PSDA101800 ⁽²⁾	18	5.00
PSDA102000 ⁽²⁾	20	5.30
PSDA102200 ⁽²⁾	22	5.70
PSDA102400 ⁽²⁾	24	6.10
PSDA102600 ⁽²⁾	26	6.40
PSDA102800 ⁽²⁾	28	6.75
PSDA103000 ⁽²⁾	30	7.10
PSDA103200 ⁽²⁾	32	7.40
PSDA103600 ⁽²⁾	36	7.70

NOTE: 33,550 lb rated tensile strength.

(1) RUS listed, n - double arming bolt.

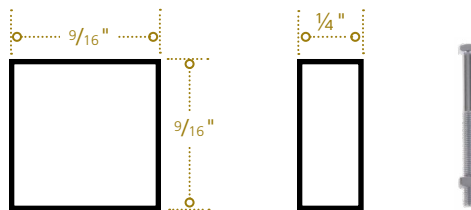
(2) ANSI standard, C-135.1.



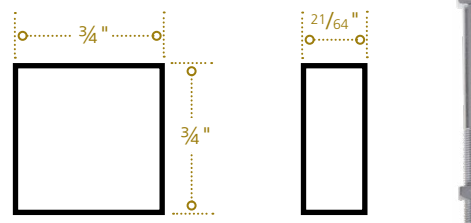
Bolts

MACHINE BOLTS, SQUARE HEAD CABLE A SUSPENSION BOLTS

Sometimes referred to as "crossarm" bolts or "through" bolts, Hubbell Power Systems Square Head and Hex Head Machine Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1 and are available in a range of thread diameters and lengths. The head is marked with an identifying "C" and the bolt includes an assembled square nut. Threads are formed with the rolled thread process. Bolt length is measured from the underside of the head to the last thread. Semi-cone point comes on bolts 8" and longer in 1/2", 5/8" and 3/4" diameters. All others have chamfered or rounded ends.



3/8" Bolt Head Size



1/2" Bolt Head Size

3/8" Thread Diameter (3/8-16 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
8602	2	1	0.11
8603	3	1	0.13
8604	4	3	0.15
860412 ⁽¹⁾	4½	3	0.17
8605 ⁽¹⁾	5	3	0.18
860512	5½	3	0.19
T2060412 ⁽¹⁾	6	3	0.21
8607	7	3	0.24
8608	8	4	0.27
8610	10	4	0.32

NOTE: 4,250 lb rated tensile strength.

(1) ANSI standard, C-135.1.

1/2" Thread Diameter (1/2-13 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
870112	1½	1¼	0.17
400013470 ⁽²⁾	1¾	1¼	0.19
8702	2	1¼	0.21
870212	2½	1¼	0.24
8703	3	1¼	0.27
8704	4	3	0.31
870412 ^{(1) (2)}	4½	3	0.33
8705 ⁽¹⁾	5	3	0.35
8706 ^{(1) (2)}	6	3	0.40
8707 ⁽¹⁾	7	3	0.48
8708 ^{(1) (2)}	8	4	0.49
8709 ⁽¹⁾	9	4	0.57
8710 ^{(1) (2)}	10	4	0.60
8712 ^{(1) (2)}	12	4	0.71
8714 ⁽¹⁾	14	6	0.73
DF2B16	16	6	0.82

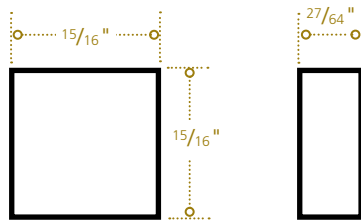
NOTE: 7,800 lb rated tensile strength.

(1) RUS listed, c - machine bolt.

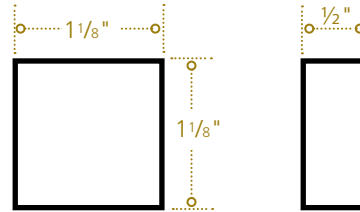
(2) ANSI standard, C-135.1.

Bolts

MACHINE BOLTS, SQUARE HEAD (continued) CABLE A SUSPENSION BOLTS



5/8" Bolt Head Size



3/4" Bolt Head Size



AERIAL
INSTALLATION

5/8" Thread Diameter (5/8-11 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)	Cable A Suspension Bolt Catalog Number
	Length	Minimum Thread Length		
8802	2	1 1/2	0.36	
880212	2 1/2	2 1/4	0.39	
PS8803	3	1 1/2	0.48	
8804	4	3	0.57	
8805	5	3	0.60	
8806 ^{(1) (2)}	6	3	0.69	
8807 ^{(1) (2)}	7	4	0.75	
8808 ^{(1) (2)}	8	4	0.78	400013645*
8809 ⁽¹⁾	9	4	0.88	
8810 ^{(1) (2)}	10	6	0.93	400013652*
8812 ^{(1) (2)}	12	6	1.08	400013660*
8814 ^{(1) (2)}	14	6	1.23	400013678*
8816 ^{(1) (2)}	16	6	1.40	400013686*
8818 ^{(1) (2)}	18	6	1.54	400013694*
8820 ⁽¹⁾	20	6	1.71	400013702*
8822 ⁽¹⁾	22	6	1.76	400013710*
8824 ⁽¹⁾	24	6	1.96	400314274*
8826	26	6	2.15	
8828	28	6	2.31	
8830	30	6	2.52	
8832	32	6	2.78	

NOTE: 12,400 lb rated tensile strength.

* Cable A Suspension Bolts include 2 square nuts

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C-135.1.

3/4-Inch Thread Diameter (3/4-9 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)	Cable A Suspension Bolt Catalog Number
	Length	Minimum Thread Length		
PS8902	2	1 3/4	0.65	
PS8903	3	1 3/4	0.75	
PS8906	6	3	1.09	
PS8907	7	3	1.18	
8908 ^{(1) (2)}	8	4	1.26	
8910 ^{(1) (2)}	10	4	1.54	400013728*
8912 ^{(1) (2)}	12	6	1.62	400013736*
8914 ^{(1) (2)}	14	6	1.88	400013744*
8916 ^{(1) (2)}	16	6	2.25	400013751*
8918 ^{(1) (2)}	18	6	2.32	400013769*
8920 ⁽¹⁾	20	6	2.52	
8922 ⁽¹⁾	22	6	2.68	400013022*
8924 ⁽¹⁾	24	6	3.04	400013024*
8926 ⁽¹⁾	26	6	3.08	
8928	28	6	3.23	
8930	30	8	3.46	
8932	32	8	3.69	
PS8934 ⁽²⁾	34	8	3.83	
PS8936 ⁽²⁾	36	8	4.60	

NOTE: 18,350 lb rated tensile strength.

* Cable A Suspension Bolts include 2 square nuts

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C-135.1.

Bolts

MACHINE BOLTS, SQUARE HEAD (continued) CABLE A SUSPENSION BOLTS

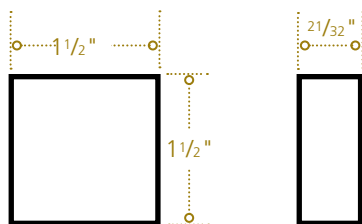
7/8-Inch Thread Diameter (7/8- 9 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSSB780250	2½	2	0.90
PSSB780300	3	2	0.94
PSSB780400	4	2	1.15
PSSB780500	5	2½	1.30
PSSB780600 ⁽¹⁾	6	2½	1.44
PSSB780800 ^{(1) (2)}	8	3	1.76
PSSB781000 ^{(1) (2)}	10	6	2.08
DFSB12 ^{(1) (2)}	12	6	2.40
C2050254 ^{(1) (2)}	14	6	2.84
C2050255 ^{(1) (2)}	16	6	3.16
C2050256 ^{(1) (2)}	18	6	3.52
C2050257 ⁽¹⁾	20	6	3.90
C2050258 ⁽¹⁾	22	6	4.25
DFSB24 ⁽¹⁾	24	6	4.30
PSSB782600 ⁽¹⁾	26	8	4.62
PSSB782800 ⁽¹⁾	28	8	4.94
PSSB783000	30	8	5.27
PSSB783200	32	8	5.61
PSSB783800	38	8	6.20
PSSB784000	40	8	6.60
PSSB784200	42	8	6.80

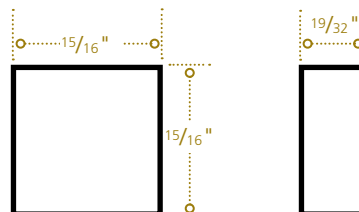
NOTE: 24,500 lb rated tensile strength. For additional square nuts, see page A92.

(1) RUS listed, c - machine bolt.

(2) ANSI standard, C135.1.



1" Bolt Head Size



7/8" Bolt Head Size



1-Inch Thread Diameter (1-8 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSSB100350	3½	2½	1.48
PSSB100400	4	3	1.58
PSSB100500	5	3	1.79
PSSB100600	6	3	2.01
PSSB100800 ⁽¹⁾	8	4	2.43
PSSB101000 ⁽¹⁾	10	4	2.85
PSSB101200 ⁽¹⁾	12	6	3.27
PSSB101400 ⁽¹⁾	14	6	3.69
PSSB101600 ⁽¹⁾	16	6	4.12
PSSB101800 ⁽¹⁾	18	6	4.54
PSSB102000	20	6	4.96
PSSB102200	22	6	5.38
PSSB102400	24	6	5.81
PSSB102600	26	6	6.24
PSSB102800	28	8	6.67
PSSB103000	30	8	7.10
PSSB103200	32	8	7.53

NOTE: 33,500 lb rated tensile strength. For additional square nuts, see page A92.

(1) ANSI standard, C-135.1.



Bolts

MACHINE BOLTS, HEX HEAD

Hubbell Power Systems Square Head and Hex Head Machine Bolts are manufactured to HPS specifications that meet the requirements of ANSI C135.1 and are available in a range of thread diameters and lengths. The head is marked with an identifying "C" and the bolt includes an assembled hex nut. Threads are formed with the rolled thread process. Bolt length is measured from the underside of the head to the last thread.

AERIAL
INSTALLATION

½-Inch Thread Diameter (½-13 UNC)

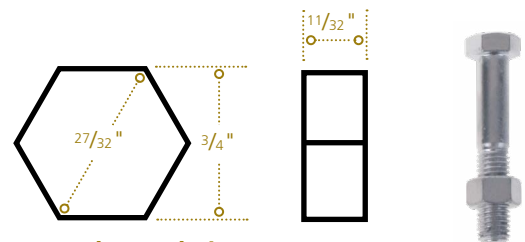
Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSHB120125	1¼	1¼	0.14
PSHB120150	1½	1¼	0.15
PSHB120175	1¾	1¼	0.16
PSHB120200	2	1¼	0.17
PSHB120250	2½	1¼	0.20
PSHB120300	3	1¼	0.23
PSHB120350	3½	1¼	0.27
PSHB120400	4	3	0.30

NOTE: 7,800 lb rated tensile strength.

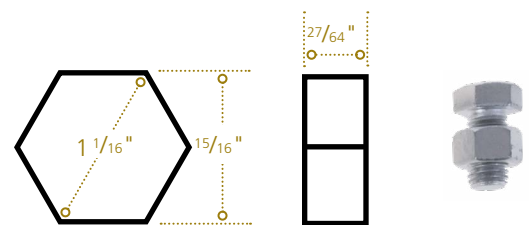
⅝-Inch Thread Diameter (⅝-11 UNC)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Minimum Thread Length	
PSHB580150	1½	1¼	0.33
PSHB580175	1¾	1½	0.35
PSHB580200	2	1½	0.37
PSHB580225	2¼	1½	0.40
PSHB580250	2½	1½	0.43
PSHB580300	3	1½	0.46
PSHB580400	4	3	0.52

NOTE: 12,400 lb rated tensile strength.



1/2" Bolt Head Size



5/8" Bolt Head Size

Bolts

OVALEYE BOLTS

Bolts with 5/8" and 3/4" shanks have 1-1/2" x 2" ovaleyes. Drop-forged, galvanized steel bolts have cone type points and rolled threads.

1/2-Inch Shank Diameter (7/16" x 1 1/4" x 1 5/8" Ovaleye)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Thread Length	
29937	6	4	0.66
29939	8	4	0.77
29943	12	6	1.00

NOTE: 7,800 lb rated tensile strength.

3/4-Inch Shank Diameter (5/8" x 1 1/2" x 2" Ovaleye)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length Under Eye	Thread Length	
29978 ^{(1) (2)}	8	4	1.80
29980 ^{(1) (2)}	10	4	2.00
29982 ^{(1) (2)}	12	6	2.28
29984 ^{(1) (2)}	14	6	2.48
29986 ^{(1) (2)}	16	6	2.68
29988 ^{(1) (2)}	18	6	3.14
29990 ^{(1) (2)}	20	6	3.26

NOTE: 20,050 lb rated tensile strength.

(1) RUS listed.

(2) ANSI standard, C135.5

5/8-Inch Shank Diameter (9/16" x 1 1/2" x 2" Ovaleye)

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Length	Thread Length	
29956 ^{(1) (2)}	6	4	1.00
29958 ^{(1) (2)}	8	4	1.04
29959 ^{(1) (2)}	9	4	1.13
29960 ^{(1) (2)}	10	6	1.22
29962 ^{(1) (2)}	12	6	1.44
29964 ^{(1) (2)}	14	6	1.46
29966 ^{(1) (2)}	16	6	1.68
29968 ^{(1) (2)}	18	6	2.08
29970 ^{(1) (2)}	20	6	2.40

NOTE: 13,550 lb rated tensile strength.

(1) RUS listed.

(2) ANSI standard, C135.4, C135.5



No. 29960

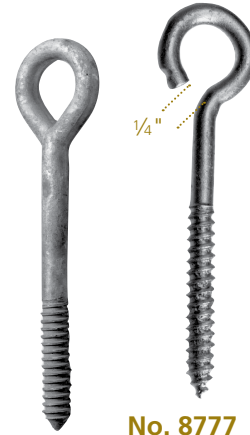
Bolts

SCREW EYE BOLTS

Gimlet-point lag-screw thread. Drop-forged except Catalog Number 8777. Hot-dip galvanized per ASTM A-153.

Catalog Number	Type	Dimensions Inches			Approx Ship Wt Each (lbs)
		Size of Eye	Diameter	Length Under Eye	
29930	Ovaleye	1¼ x 1½	½	6	0.65
C2050094	Ovaleye	1¼ x 1½	½	4	0.54
8777 ⁽¹⁾	Hookeye	¾	¾	3½	0.16

(1) ¼" eye opening.



No. 29930

No. 8777

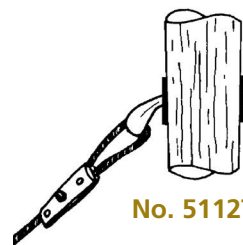
THIMBLEYE® BOLTS

Contoured eye keeps guy strand from kinking, bending or spreading. Drop-forged steel. Hot-dip galvanized. Cone-type points. Eyes of angle bolts are offset 45 degrees.

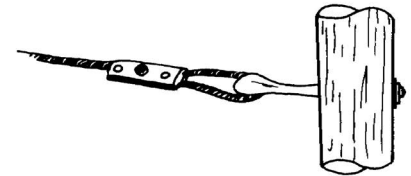
Catalog Number		Dimensions Inches		Rated Tensile Strength (lbs)	Approx Ship Wt Each (lbs)
Straight Bolt	Angle Bolt	Size	Thread Length		
DG1F8 ⁽¹⁾	DG4F8 ^{(1) (2)}	⅝ x 8	4	12,400	1.12
5510 ^{(1) (2)}	5010 ^{(1) (2)}	⅝ x 10	4	12,400	1.48
5512 ^{(1) (2)}	5012 ^{(1) (2)}	⅝ x 12	6	12,400	1.76
5514 ⁽²⁾	5014 ⁽²⁾	⅝ x 14	6	12,400	1.88
5516	5016	⅝ x 16	6	12,400	1.92
DG1F18	—	⅝ x 18	6	12,400	2.00
PS5520 ⁽¹⁾	—	⅝ x 20	6	12,400	2.05
PS5608 ⁽¹⁾	—	¾ x 8	4	18,350	2.08
PS5610 ⁽¹⁾	5110T ⁽¹⁾	¼ x 10	4	18,350	2.28
5612 ⁽¹⁾	5112T ⁽¹⁾	¾ x 12	6	18,350	2.44
5614	5114T	¾ x 14	6	18,350	2.64
PS5616	—	¾ x 16	6	18,350	2.71
PS5618 ⁽¹⁾	400012886 ⁽¹⁾	¾ x 18	6	18,350	2.60 / 3.20

(1) RUS listed.

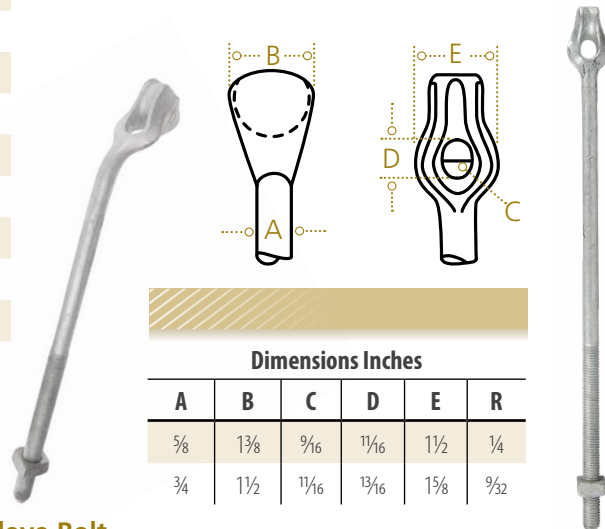
(2) ANSI standard, C- 135.4.



No. 5112T



No. 5612



Dimensions Inches

A	B	C	D	E	R
⅝	1⅜	⅞	1⅞	1½	¼
¾	1½	1⅞	1⅞	1⅝	⅜

Angle Thimbleye Bolt

Straight Thimbleye Bolt

Braces

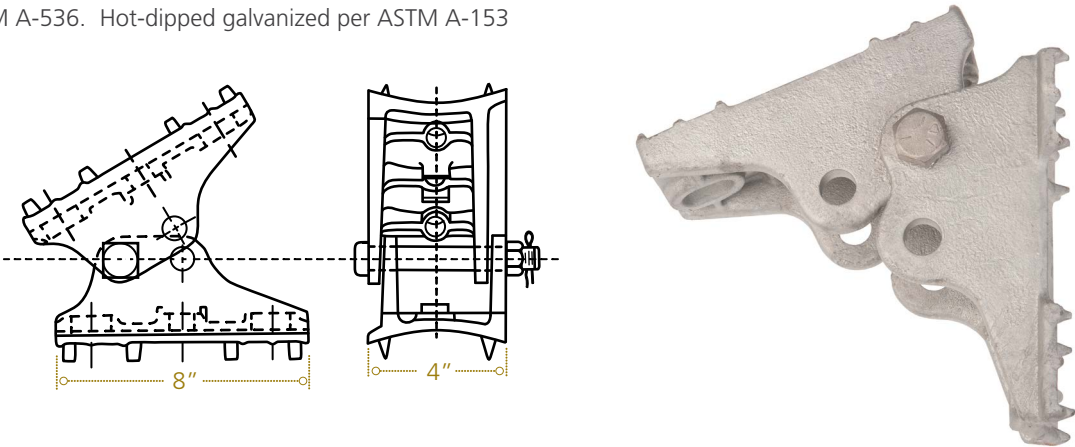
AERIAL
INSTALLATION

PUSH POLE BRACE

For use in push pole application where tension guying is not feasible. Brace adjusts for different pole angles.

Catalog Number	Dimensions Inches				Approx Ship Wt Each (lbs)
	Pole Diameter	Base Diameter	Mounting Bolt Diameter	Hinge Bolt Diameter	
SG611	6 - 11	4 x 8	3/4	3/4	7.50

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153

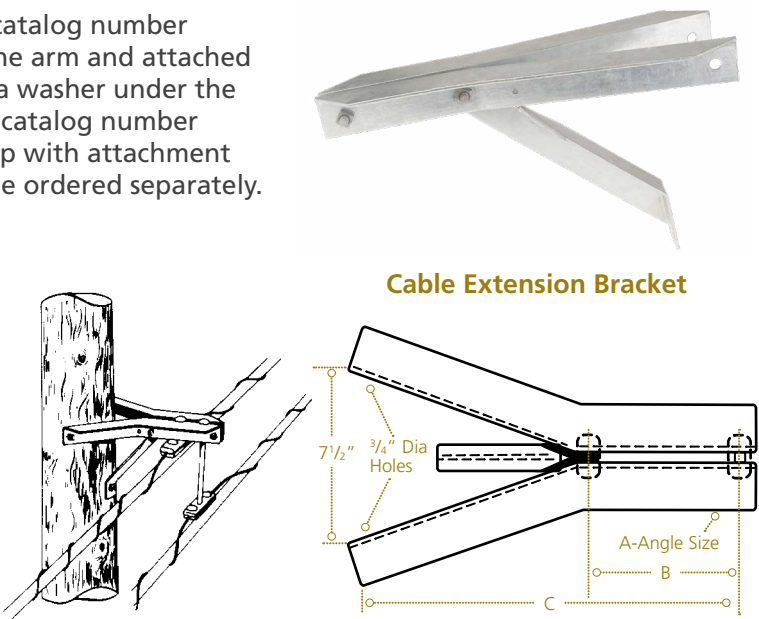


Brackets

CABLE EXTENSION BRACKETS

For suspending cables at a distance from the pole, catalog number 7903 Cable Suspension Clamp is suspended under the arm and attached through the center slot to a 5/8" machine bolt with a washer under the bolt head. Cable extension from the pole is 23" for catalog number 7920, and 41" for catalog number 7921. Cable clamp with attachment bolt and pole mounting bolts, or lag screws, must be ordered separately. Hot-dip galvanized.

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	A - Angle Size	B	C	
7920	3 x 2½ x ¼	8½	26	29.0
7921	3½ x 2½ x ⅝	18¾	44½	62.0



TYPE L SUSPENSION BRACKET

Consists of one support strap and one L-bracket standoff. The bracket secures one messenger clamp adjacent to pole and one clamp below and offset from pole. Through bolt and suspension clamps are purchased separately.

Catalog Number	Description	Dimensions (In)	Approx Ship Wt Each (lbs)
260520846	Bracket, Type L Suspension	L bracket - 1¼ x ½ Strap - 1¼ x ⅝	3.7
260634910	Strap Only	1¼ x ⅝	0.84



No. 260520846



No. 260634910

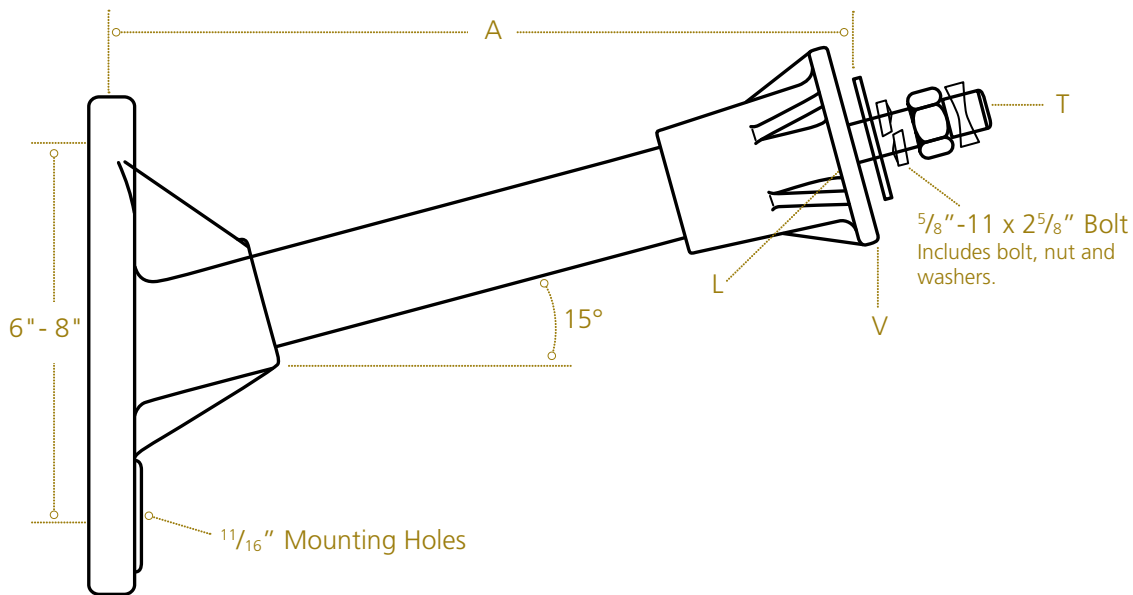
Brackets

COMMUNICATION STANDOFF BRACKETS

With over 50 years of experience in manufacturing Chance® Fiberglass Rod polymer insulation products, we are continually expanding our product line to include utility requested products.

These armless construction configurations include various components, such as ductile iron and aluminum fittings, optional lead, nylon or plastisol threads.

Fiberglass units do not warp, split or shrink. They reduce the risk of pole fires due to tracking. All units are coated with a special ultraviolet-resistant polyurethane gray paint or silicone coating. They can also reduce the labor involved during installation, because they are shipped ready to install.



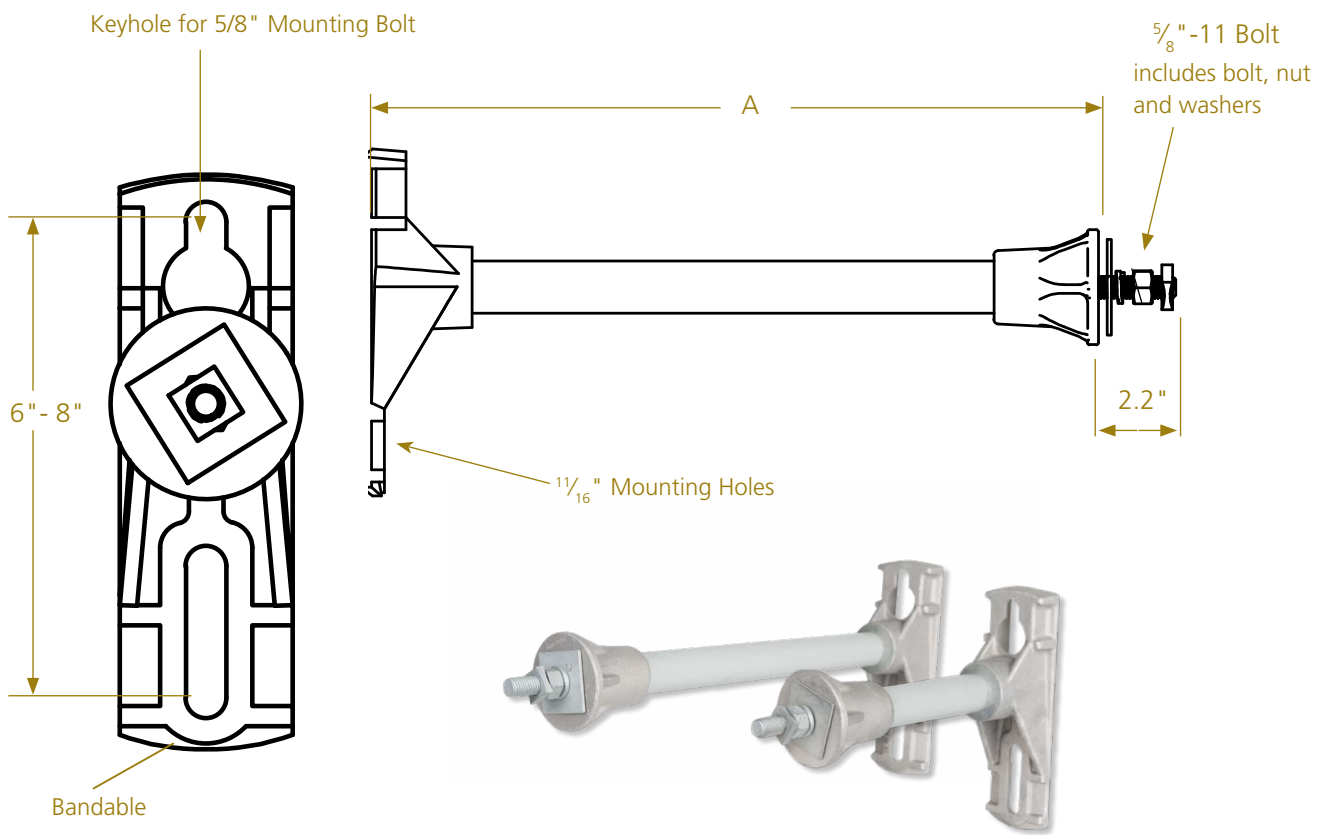
Medium Duty 1 1/2" (38 mm) Diameter Rod

Catalog Number	Length A Inches (cm)	Minimum Ultimate ⁽¹⁾			Weight Each lb
		Vertical V lb (kg)	Longitudinal L lb (kg)	Transverse T lb (kg)	
1CSM12	12 (30.5)	2,100 (945)	1,300 (585)	1,500 (675)	3.8
1CSM15	15 (38.1)	1,800 (810)	1,200 (540)	1,500 (675)	4.2
1CSM18	18 (45.7)	1,500 (675)	1,000 (450)	1,500 (675)	4.6
1CSM21	21 (53.3)	1,300 (585)	850 (383)	1,500 (675)	5.0
1CSM24	24 (61.0)	1,100 (495)	700 (315)	1,500 (675)	5.4
1CSM30	30 (76.2)	900 (405)	600 (270)	1,500 (675)	6.1
1CSM36	36 (91.4)	900 (405)	500 (225)	1,500 (675)	6.8

(1) Recommended maximum working load is 50% of minimum ultimate ratings listed. Consult factory for additional lengths and bases.

Brackets

COMMUNICATION STANDOFF BRACKET (0°)



- Base design permits bolting or banding to structure
- Rod is fiberglass with UV-resistant urethane gray paint
- Base and End Fitting are aluminum alloy.

Medium Duty 1½" (38 mm) Dia. Fiberglass Rod					
Catalog Number	Length A Inches (cm)	Minimum Ultimate ⁽¹⁾			Weight Each lb (kg)
		Vertical V lb (kg)	Longitudinal L lb (kg)	Transverse T lb (kg)	
1CSM120	12 (30)	2100 (953)	900 (408)	1500 (680)	3.8 (1.7)
1CSM150	15 (38)	1800 (810)	800 (363)	1500 (680)	4.2 (1.9)
1CSM180	18 (46)	1500 (680)	700 (318)	1500 (680)	4.6 (2.1)
1CSM210	21 (53)	1200 (544)	600 (272)	1500 (680)	5.0 (2.3)
1CSM240	24 (61)	900 (408)	500 (227)	1500 (680)	5.4 (2.4)

⁽¹⁾ Recommended maximum working load is 50% of minimum ultimate ratings listed. Consult factory for additional lengths, bases, and long bolt option.
 Add "SC" suffix to the end of the catalog number to denote Silicone Coated rod.

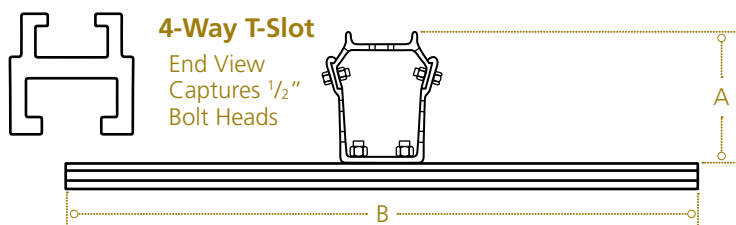
Brackets

CONDUIT BRACKETS

A multi-purpose bracket for mounting 1" through 6" conduit in a variety of ways. Bracket will mount up to four 6" conduits with unlimited adjustability. 4-Way T-Slot extrusion eliminates field drilling. Unit mounts to the pole on 3 5/8" hole centers using 5/8" thru-bolt and 1/2" lag (not supplied). Conduit straps are not included; see below. Additional T-Slot Shapes are available on the following pages.



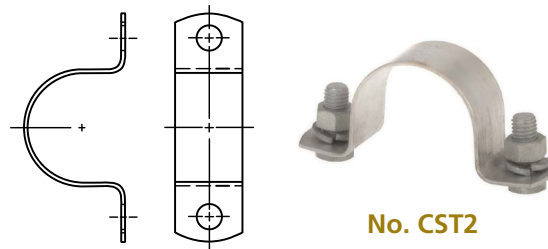
Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	A	B	
C6CS0	6	N/A	2.31
C6CS06	6	6	3.03
C6CS08	6	8	3.10
C6CS012	6	12	3.50
C6CS018	6	18	4.44
C6CS024	6	24	4.85
C6CS036	6	36	5.81
C9CS0	9	N/A	2.97
C9CS012	9	12	4.81
C9CS024	9	24	6.02
C9CS036	9	36	7.88



CONDUIT STRAP KITS

Strap Kits with the following variations are available for use with the Conduit Brackets above. The straps have two holes for mounting one conduit section. Each Strap Kit contains a strap, two each 1/2" x 1 1/4" hex head bolts, lockwashers and hex nuts.

Catalog Number	Conduit Size	Dimensions Inches				Approx Ship Wt Each (lbs)
		A	B	C	D	
CSTK1	1	1 3/8	3	4 1/8	1 1/4	0.30
CSTK15	1 1/2	1 7/8	3 1/2	4 5/8	1 7/8	0.35
CSTK2	2	2 3/8	3 15/16	5 1/16	2 1/4	0.40
CSTK25	2 1/2	2 7/8	4 7/16	5 9/16	2 3/4	0.45
CSTK3	3	3 1/2	5 1/16	6 3/16	3 3/8	0.50
CSTK35	3 1/2	4	5 9/16	6 11/16	3 15/16	0.60
CSTK4	4	4 1/2	6 1/16	7 3/16	5 3/8	0.65
CSTK5	5	5 9/16	7 1/8	8 1/4	5 1/2	0.70
CSTK6	6	6 3/8	8 3/8	9 5/16	6 1/2	0.75

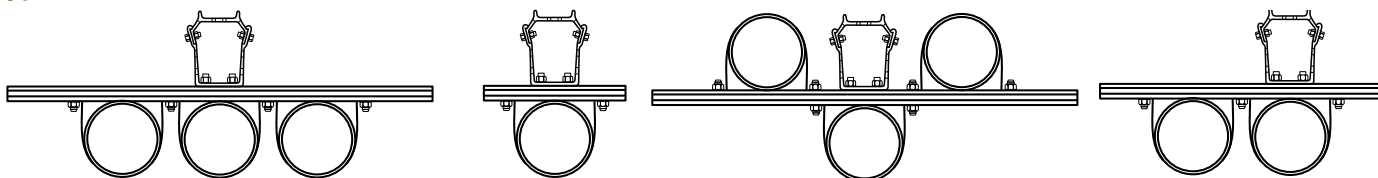


CONDUIT STRAP ONLY

Aluminum conduit strap without bolts included. One 9/16" hole on each end.

Catalog Number	Size (in)	Approx Ship Wt Each (lbs)
CST2	2	0.12
CST3	3	0.17
CST4	4	0.30
CST5	5	0.33

Typical Installations

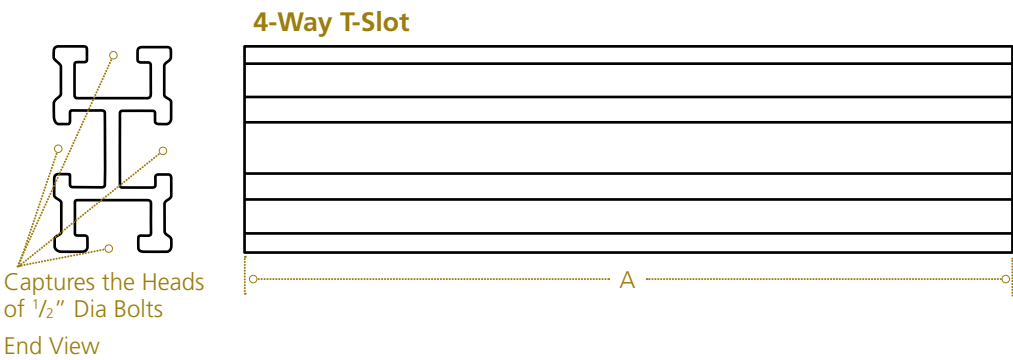


Brackets

T-SLOT SHAPED CONDUIT BRACKETS

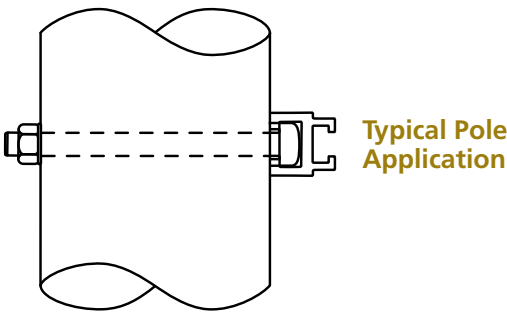
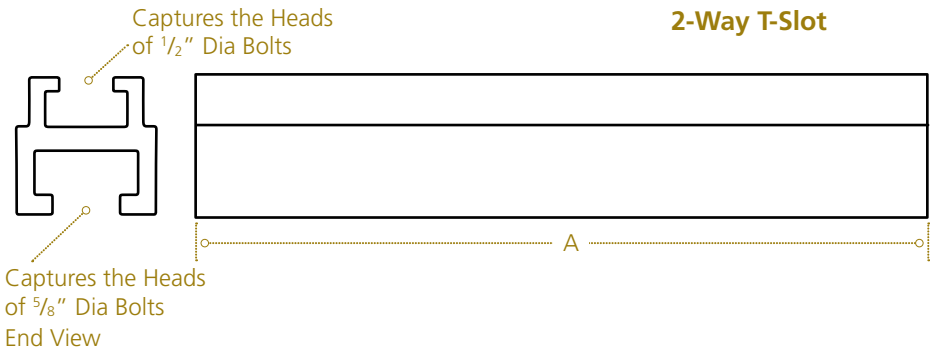
For versatile equipment mounting, these custom T-Slot Shapes are extruded from high-strength, heat-treated 6061T6 aluminum alloy.

A multi-purpose extrusion for mounting equipment in four directions using 1/2" diameter hardware.



2-Way T-Slot		
Catalog Number	Dimension A Inches	Weight Each lb
C2WT12	12	1
C2WT24	24	2
C2WT36	36	3
C2WT48	48	4
C2WT60	60	5
C2WT120	120	10

NOTE: Both the extrusions can be used for thru-bolt mounting of equipment to poles, structures, walls, enclosures, machinery, etc. Other lengths are available by special order. Contact Hubbell Power Systems for details.



4-Way T-Slot		
Catalog Number	Dimension A Inches	Weight Each lb
C4WT12	12	1.25
C4WT24	24	2.25
C4WT36	36	3.25
C4WT48	48	4.50
C4WT60	60	5.50
C4WT120	120	11.00

AERIAL
INSTALLATION

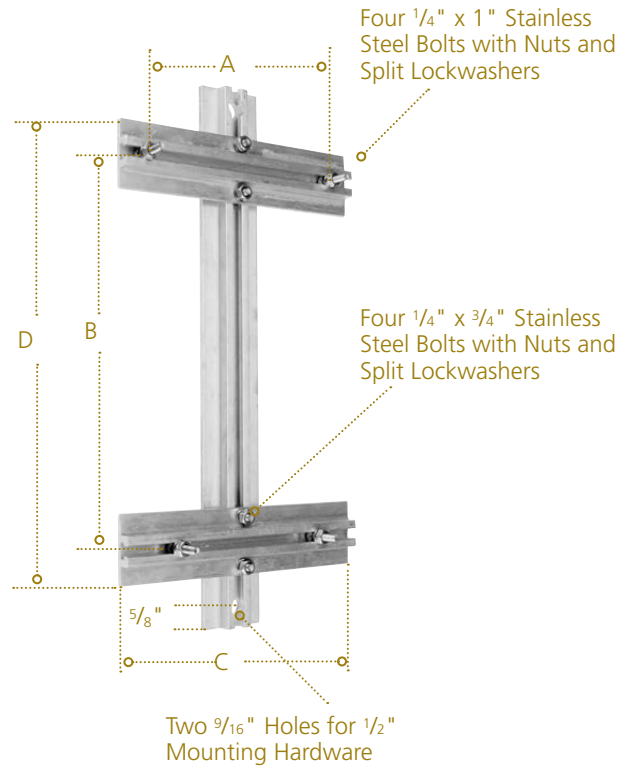


Brackets

CABINET MOUNTING BRACKET

- For mounting meter cabinets, meter sockets or other light-duty enclosures, with a maximum weight not to exceed 500 pounds.
- Installs to pole or wall with two 1/2" fasteners, not included.
- Adjust for various hole patterns. See ordering information below for ranges.
- Consists of one vertical support, two horizontal supports and stainless steel mounting hardware.
- Shipped unassembled.

Catalog Number	Mounting Range Inches				Wt Each lb
	A	B	C	D	
CCMB812	1 - 7 $\frac{1}{4}$	2 - 12	8	16 $\frac{3}{8}$	2.25
CCMB1218	1 - 11 $\frac{1}{4}$	2 - 18	12	22 $\frac{3}{8}$	3.00
CCMB1624	1 - 15 $\frac{1}{4}$	2 - 24	16	28 $\frac{3}{8}$	3.75
CCMB1830	1 - 17 $\frac{1}{4}$	2 - 30	18	34 $\frac{3}{8}$	4.25

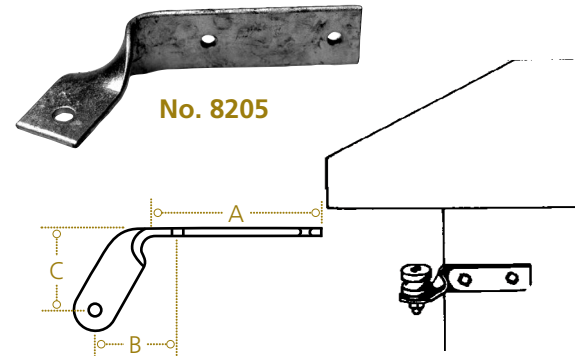


Brackets

HOUSE BRACKET

Used where the pole lead attaches to the building at an angle or to carry leads around the corner of a building. Used with porcelain spool insulator and 8604 bolt which are not included. Hot-dip galvanized per ASTM A-153.

Hubbell Catalog Number	Bell Corp Number	Dimensions Inches						Approx Ship Wt Each (lbs)
		Mtg. Holes	Ins. Holes	Steel Size	A	B	C	
8205	400017836	9/32	13/32	1/2 x 3/16	4 3/4	2 7/8	2 5/8	0.82



No. 8205

AERIAL
INSTALLATION

WALL STRAP

Deadend strands to the mounting wall

Catalog Number	Change to Mast Diameter Range (inches)	Approx Ship Wt Each (lbs)
400302402	Wall Strap with 3/8" Offset	3.30
PSC2080291	U Wall Strap deadends strands at right angles to the mounting wall. Attach the U wall strap using 1/2" hardware (not supplied).	1.20
DC168B1	Wall Strap with Thimble end fitting	2.40



No. 400017836

No. 400302402

MAST SERVICE DEADEND BRACKET

Attaches to 1 1/4" through 3" diameter service masts. Front strap is rounded to prevent damage to bail of the service clamp. Square hole at end of the front slot captures the carriage bolt head during installation and prevents slippage after installation. Hot-dip galvanized per ASTM A-153.

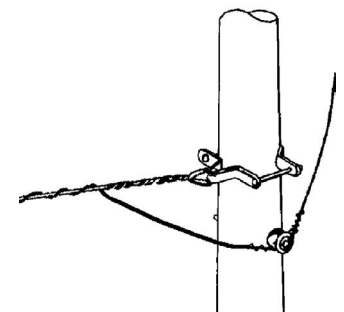
Catalog Number	Change to Mast Diameter Range (inches)	Approx Ship Wt Each (lbs)
C2060169	1 1/4 -3	1.02
DC12M1	1 1/4 -2	0.78



No. C2060169



No. DC12M1



Brackets

WALL BRACKET

Corner Attachment Bracket is an integral thimble eye pole attachment for deadending strand and guy grips at angles of 35° to 60°. Pole mounting surface is curved with integral spurs. Accommodates Maximum 1/2" diameter strand/guy grips.



No. PSC2080238



No. PSC2080239

Catalog Number	Description	Approx Ship Wt Each (lbs)
PSC2080238	D Wall	1.00
PSC2080239	E Wall	1.83
PSC2080240	House	0.54

TYPE C DEADEND BRACKET

5/16" Clevis Pin Included. Galvanized steel, ASTM A-153.



No. 400017869

Catalog Number	Description	Approx Ship Wt Each (lbs)
400017869	Deadend Attachment	1.60

CORNER BRACKET

Pole Mount Deadend Bracket Assembly used to deadend at the pole when an obstruction on the pole prohibits standard deadend hardware. Mounting hole for 5/8" hardware (not included).



No. PSC2080479

Catalog Number	Description	Approx Ship Wt Each (lbs)
PSC2080479	Deadend Attachment	1.60
PSC2080491	Pole Mount Assembly	27.90



No. PSC2080491

Brackets

SIX-PAIR TERMINAL HANGER BRACKETS

Application: Attaching six-pair terminals to bare strand or self-support cable.

Features

- Provides clearance for terminal to mount under cable.
- Works on all six-pair terminals.
- Galvanized steel construction for strength.

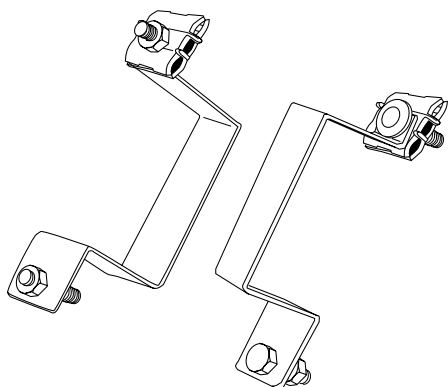
Ordering information

EM 9997

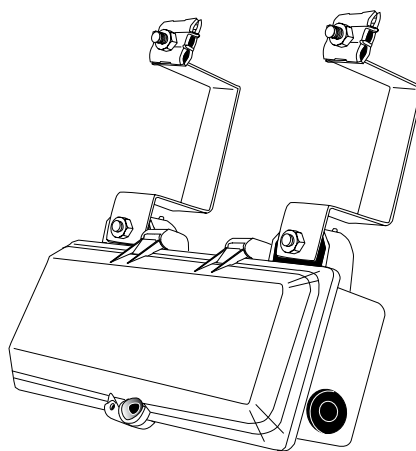
Two brackets for bare strand or self- support cable

EM 9997-1

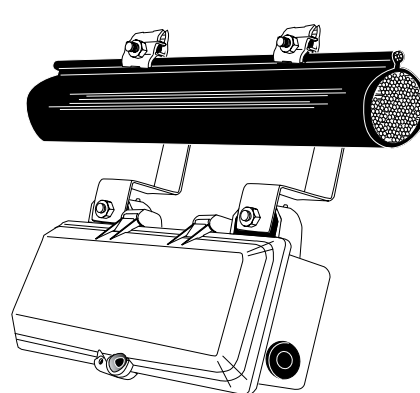
Two brackets with penetrating teeth for self-support cable where a ground is needed



Piece Parts



Applied on Terminal



Applied on Cable

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

Brackets

HANGER BRACKET (TAP)

Aluminum, for strand 6M and 6.6M. Used in CATV drop installations to secure a tap or other electronics to the messenger strand. The bracket can be bent at any point to achieve the desired horizontal location.

Features

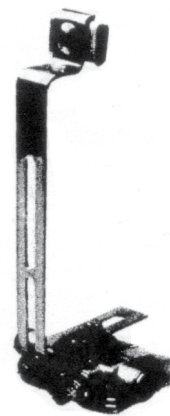
- Size range 3" to 9" (distance between strand and tap).
- Bracket and clamping plates are made of aluminum alloy.
- Bolt and nut are made of steel.
- Designed for 1/4" (6.6M) and 5/16" (6M) messenger strand.
- Square hole in bracket prevents bolt rotation when tightening.
- Bend at top edge of bracket prevents rotation when bolts are tightened.
- Interlocking clamping plates assure a positive and secure grip on the messenger strand.
- Elongated slots provide variable positioning of tap or other electronics.

Ordering information: EM 0920

Bracket as Shipped



Bracket bent
to desired
horizontal
location



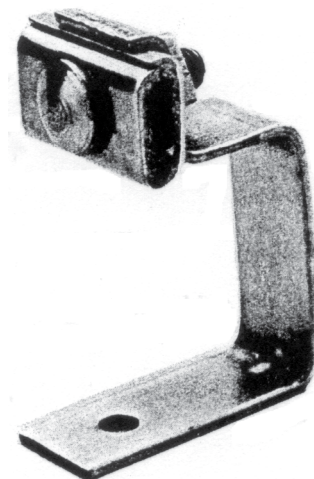
ALUMINUM EXTENSION BRACKET (TAP)

Aluminum, for strand 6M and 6.6M. Used in CATV drop installations to secure a tap to the messenger strand when it cannot be attached directly. The unit is offset below the strand, preventing cable abrasion on the equipment housing.

Features

- 2-1/2" size (distance between strand and tap).
- Bracket and clamping plates are made of aluminum alloy.
- Bolt and nut are made of steel.
- Designed for 1/4" (6.6M) and 5/16" (6M) messenger strand.
- Square hole in bracket prevents bolt rotation when tightening.
- Tap mounting hole accepts up to a 5/16" bolt.
- Bend at top edge of bracket prevents rotation when bolts are tightened.
- Interlocking clamping plates assure a positive and secure grip on the messenger strand.

Ordering information: EM 0921



SERVICE DEADEND PLATE

- Plate, Service Deadend, 1 1/2"
- Hot dip galvanized per ASTM A-153
- Hubbell Catalog number DC13E1



No. DC13E1

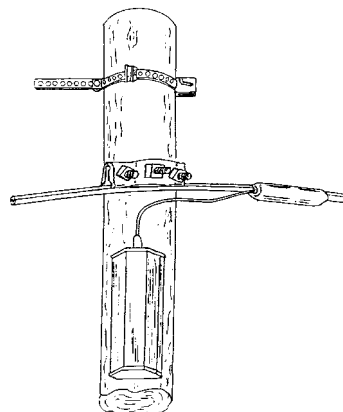
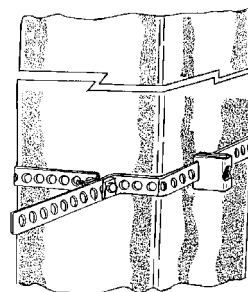
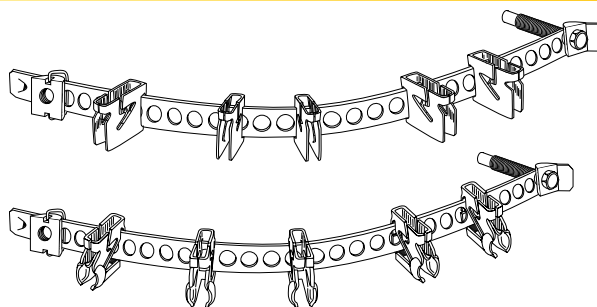
Clamps

STAINLESS STEEL MAST CLAMPS

All-stainless-steel strap-type mast clamp, with movable hooks for anchoring aerial drop wire. Designed to secure telephone and CATV aerial drop wire installations to steel masts, wooden poles, concrete poles.

Features

- All-stainless-steel construction for strength and corrosion resistance.
- Installs on round or square poles and masts.
- Each hook can accommodate up to three drop wire clamps at any angle.
- Upon installation, the hooks can be moved to any position along the strap length, for maximum versatility.
- Works with all of the popular drop wire clamps.
- Strap is made of annealed stainless steel, so it is easily formed around various shapes and diameters.



AERIAL
INSTALLATION

Catalog Number	Length	Hook Type	Number of Hooks per Assembly	Qty.	Approx Ship Wt Each (lbs)
EM 8484TT	32"	Assembled	5	50	32
EM 8484TT-5RH	32"	Removable	5	1	0.7
EM 8484TT-54	54"	Assembled	5	50	39
EM 8484TT-54S2RH	54"	Removable	2	50	27
EM 8484TT-RH	--	Removable	Removable Hooks Only	50	4

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

BEAM CLAMP

Used to deadend strands to I-beams. Set screw provides positioning during attachment of 5/8" bolt.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
PSC2080244	2	2.5	2.25	5/8	0.65



No. PSC2080244

CABLE CLAMP

C-Cable Suspension clamp is used for jacketed integrated messenger cable (Figure 8 style). Serpentine grooves in the mounting plates provide superior holding strength of insulated messenger wire. Mount clamp with 5/8" diameter through bolt. Through bolt also serves as clamping member. Clamp includes two 5/8" carriage bolts.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
PSC2080296	2	6	1.6	5/8	2.5



No. PSC2080296

CROSSOVER CLAMP 1/4"

Secures mid-span messenger strands crossing perpendicularly to each other to prevent abrasion.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
C25CC	2	2.4	2.4	1/4	0.7
PSC2080480	2	3.25	1.5	1/4 thru 3/8	1.6



No. C25CC



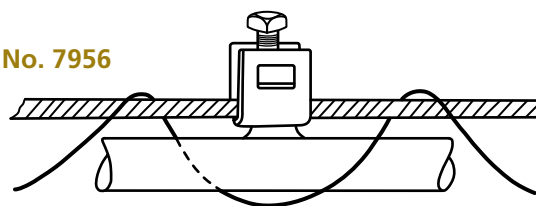
No. PSC2080480

GROUND CLAMP, B-STRAND

Connection is soldered to the cable sheath and mechanically clamped to the messenger wire. The bolt can be removed so that the clamp can be dropped over the messenger. Hot-dip galvanized per ASTM A-153.

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Steel Size	Length	Bolt Size	
7956	3/16 x 1 3/4	1 3/4	1/2 x 1 3/4	0.61

No. 7956



Clamps

GUY DEADEND CLAMPS

Parallel grooves trap strand tightly without marring. Plate halves align evenly for easy application. Each bolt has a shoulder to prevent turning while tightening. Hot-dip galvanized per ASTM A-153.

5/8" Clamp Bolts

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6460	3	6	2 1/8	3/8 thru 5/8	3.90
6461 ⁽¹⁾⁽²⁾	3	6	1 7/32	5/16 thru 1/2	2.52
6462	2	4	1 7/32	5/16 thru 1/2	1.78

(1) RUS listed. (2) NEMA standard.

1/2" Clamp Bolts

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6448	2	3 3/8	1 1/16	1/4 thru 7/16	1.32
6449	3	4	1 1/16	1/4 thru 7/16	1.62
6450 ⁽¹⁾⁽²⁾	3	6	1 1/16	1/4 thru 7/16	2.28

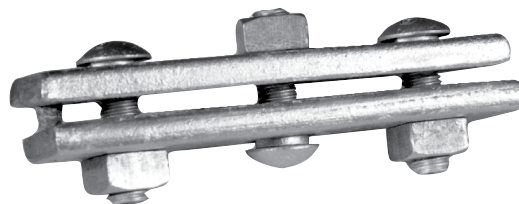
(1) RUS listed. (2) NEMA standard.

GUY CLAMPS

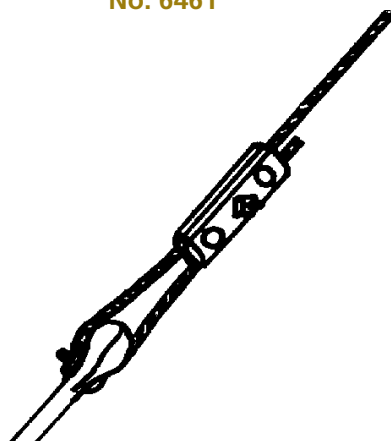
Guy clamp member provides a more positive hold on the guy strand.

Dimensions Inches

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
6409	2	3.4	1.60	3/16 thru 5/16	1.35
6410	2	4.0	1.66	5/16 thru 1/2	1.72
6409	1	1.56	1.44	3/16 thru 3/8	0.58
400121372	3	6.0	2.00	5/8 thru 3/4	6.79



No. 6461



No. 6409



No. 400121315



No. 400121372

Clamps

U-BOLT GUY CLAMPS

Guy clamp member provides a more positive hold on the guy strand.

Catalog Number	Number of Bolts	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Accepts Strand Size	
GCU38	2	3.00	2.13	$\frac{3}{16}$ thru $\frac{3}{8}$	0.6



No. GCU38

MESSENGER SUSPENSION CLAMPS

Clamps are used with through bolts to support cable at poles. Through bolt also serves as clamping member. One or more nuts and/or washers are used between the pole and clamp for required spacing. Catalog Number 7901 is used on very light cables. This one bolt clamp consists of the two clamping members only. Catalog Numbers 7902L and 7902R are used at corners and angles. Catalog Numbers 7903 and 7904 are used on straight runs.

Catalog Number	Type	Accommodates Strand Size	Dimensions Inches		Approx Ship Wt Each (lbs)
			Length	Center Hole Dia	
7901	1-Bolt Straight Susp	$\frac{1}{4}$ thru $\frac{7}{16}$	2½	$\frac{11}{16}$	0.75
7902L	3-Bolt Angle Susp.	$\frac{1}{4}$ thru $\frac{7}{16}$	7	$\frac{11}{16}$	2.04
7902R	3-Bolt Angle Susp	$\frac{1}{4}$ thru $\frac{7}{16}$	7	$\frac{13}{16}$	2.04
7903	3-Bolt Straight Susp.	$\frac{1}{4}$ thru $\frac{7}{16}$	5¾	$\frac{11}{16}$	1.78
7903L ⁽¹⁾	3-Bolt Straight Susp.	$\frac{1}{4}$ thru $\frac{7}{16}$	5¾	$\frac{11}{16}$	1.77
7904	3-Bolt Straight Susp.	$\frac{1}{4}$ thru $\frac{7}{16}$	5¾	$\frac{13}{16}$	1.75
PSC2080529	3-Bolt Angle Susp.	$\frac{1}{4}$ thru $\frac{7}{16}$	7¼	$\frac{13}{16}$	4.20

(1) Flat keeper plate.

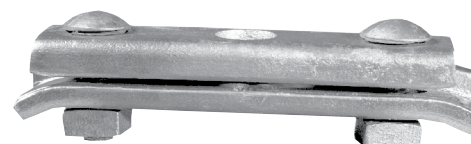
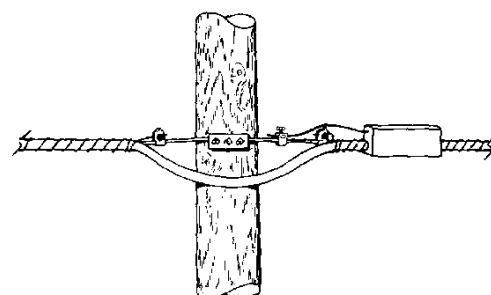
AERIAL SUSPENSION CLAMPS

Aerial Suspension Clamp, used to secure messenger to pole face. 5/8" hole in clamp base is tapped to remain in position when clamp half is removed. Top hook supports cable during installation.

Catalog Number	No. of Bolts	Minimum Cable Diameter	Maximum Cable Diameter	Approx Ship Wt Each (lbs)
ASC2	1	0.22	0.56	2.16
ASC3	1	0.43	0.75	1.77
ASC5	3	0.56	0.75	7.61



No. ASC2



No. 7902R

Clamps

SUPPORT CLAMP FOR ALL FIGURE 8 FACILITIES

Made of high tensile aluminum. Designed to receive 1/2" or 5/8" standard through bolt.

Features

- Designed to fit many sizes of support strand used for Figure 8 duct or Figure 8 cable (strand sizes .109 – .148 and 3/16" – 1/4").
- Serpentine design prevents pull-through and allows cable or messenger-on-duct to be twisted when installed.
- Two marked clamp grooves minimize insulation crushing.
- Can be used on corners up to 30° with solid support members, and 20° with stranded.

Ordering information

EM 0925

Figure 8 Support Clamp

Standard packaging: 25/bx, 30 lb/bx. No minimum order.

EM 0925.750

Version of above clamp with 13/16" middle hole for attaching 3/4" hardware

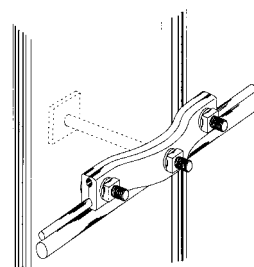


FIGURE 8 CABLE OR DUCT-ON-STRAND SUPPORT CLAMP

Two-bolt cast malleable iron clamp.

Features

- Supports strand sizes 5/16" (6M) – 3/8" (10M).
- Can accept 5/8" center bolt.
- Large load-bearing capability
- Galvanized for long life

Ordering information

EM 0926

Cable or Duct-on-Strand Support Clamp

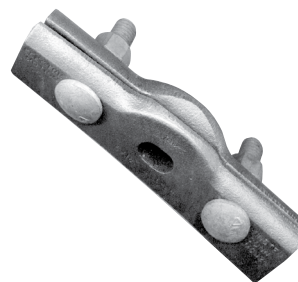


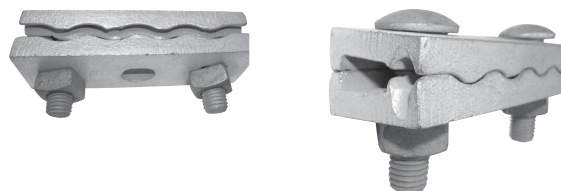
FIGURE 8 CABLE OR DUCT-ON-STRAND SUPPORT CLAMP

Support clamp that works with any jacketed strand from 1/4" to 3/8". Made from malleable iron with galvanizing. Two 5/8-16 x 2" bolts.

Ordering information

EM 0930

Cable or Duct-on-Strand Support Clamp



For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

Clamps and Clips

REINFORCING STRAP FOR CABLE EXTENSION BOLT

Used to provide support for the Cable Extension Bolt (PSC2080292) when adding a second cable run at the same level on the same side of the pole as an existing cable run.

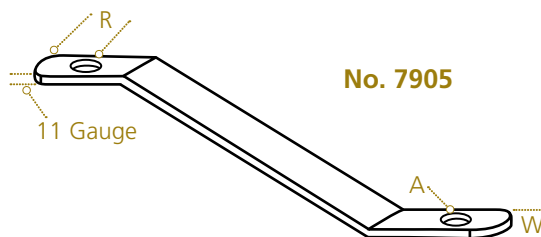
Catalog Number	Mounting Holes Diameter	Distance Between Mounting Holes	Distance of Offset	Overall Length
PSC2080241	1 $\frac{1}{16}$ "	11"	6 $\frac{3}{8}$ "	12 $\frac{1}{4}$ "
PSC2080242	1 $\frac{3}{16}$ "	11"	6 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "



REINFORCING STRAP FOR MESSENGER SUSPENSION CLAMPS

Used as additional support in attaching Messenger Suspension Clamps to pole for heavy loads.

Catalog Number	Dimensions Inches				Approx Ship Wt Each (lbs)
	A	R	D	W	
7905	1 $\frac{1}{16}$	$\frac{7}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{2}$	0.41
400314803	1 $\frac{1}{16}$	$\frac{7}{8}$	$\frac{1}{8}$	2	0.60
400314811	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{1}{8}$	1 $\frac{3}{8}$	0.40
400315016	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{1}{8}$	1 $\frac{3}{8}$	0.44



No. 7905

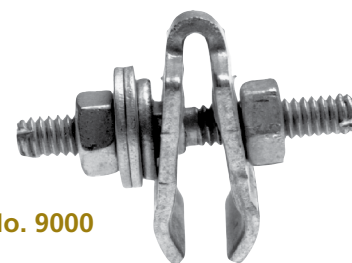


No. 400314803

LASHING WIRE CLAMP

Clamp is fitted with a special clamp bolt formed with a shoulder to prevent turning while tightening. Both ends of the $\frac{1}{4}$ " bolt are peened to prevent loss of nuts during shipment or handling. Hot-dip galvanized per ASTM A-153.

Catalog Number	Type	Dimensions Inches			Approx Ship Wt Each (lbs)
		Length	Width	Strand Size	
9000 ⁽¹⁾	E	1	1	$\frac{1}{4}$ thru $\frac{7}{16}$	0.17
CLDC	D	1	1	$\frac{1}{4}$ thru $\frac{7}{16}$	0.14



No. 9000

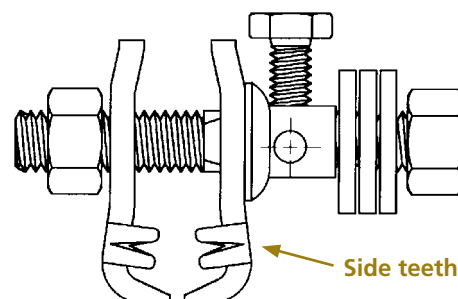
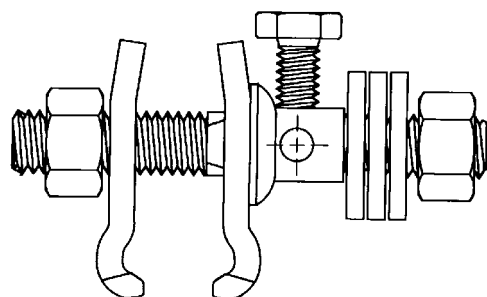
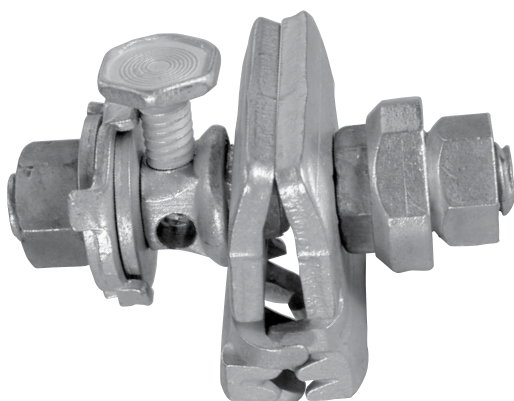


No. CLDC

(1) RUS listed.

Clamps and Clips

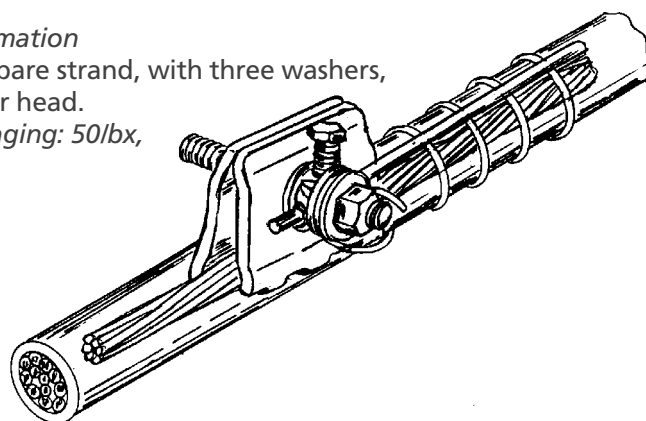
COMBINATION STRAND AND LASHING WIRE CLAMPS



Ordering information

EM 5006 – For bare strand, with three washers, no torque shear head.

Standard packaging: 50/bx, 18 lb/bx.

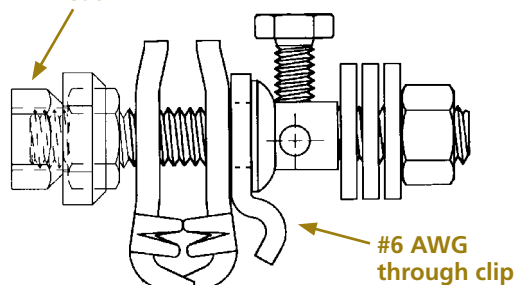


Ordering information

EM 5007 – Galvanized steel clamp for terminating lashing wire and bonding and grounding messenger strand. Side teeth to penetrate jacket.

Standard packaging: 100/bx, 29 lb/bx.

torque shear head



Ordering information

EM 5007-1 – Same as EM 5007 (above), but with torque shear head and a #6 AWG through clip.

Standard packaging: 1/bg, 50/bx, 21 lb/bx.



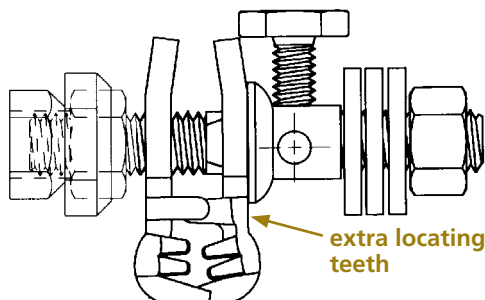
LISTED
84D8

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

Clamps and Clips

COMBINATION STRAND AND LASHING WIRE CLAMPS (CONTINUED)

AERIAL
INSTALLATION



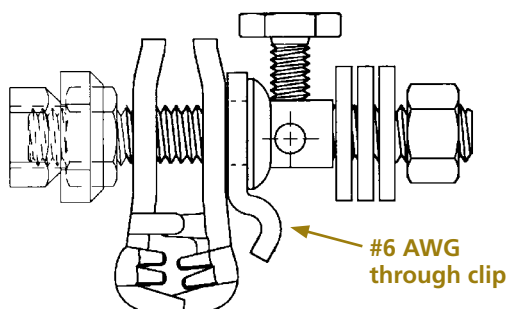
Ordering information

EM 5008 – Same as EM 5007 (opposite), but with torque shear head and extra locating teeth.

Standard packaging: 50/lbx, 19 lb/lbx.



LISTED
84D8



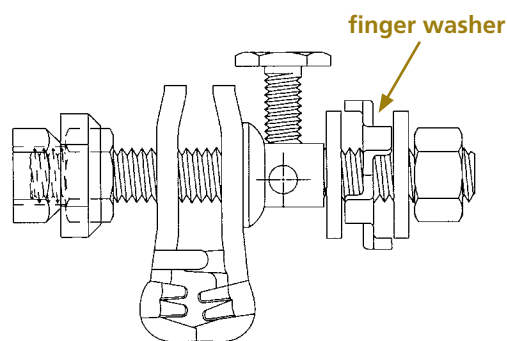
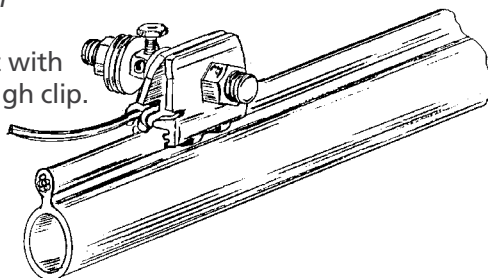
Ordering information

EM 5008-1 – Same as EM 5008 (above), but with added #6 AWG through clip.

Standard packaging: 1/lbg, 50/lbx, 21 lb/lbx.



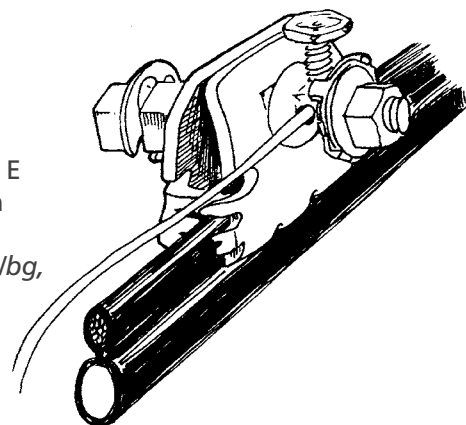
LISTED
84D8



Ordering information

EM 5008-03 – Same as EM 5008 (top), but with added finger washer.

Standard packaging: 5/lbg, 50/lbx, 21 lb/lbx.



At a glance ...

PART NUMBER	DISTINGUISHING FEATURES	LISTINGS
EM 5006		
EM 5007	Side teeth to penetrate jacket	UL
EM 5007-1	Side teeth, torque shear head, #6 AWG through clip	UL
EM 5008	Side teeth, torque shear head, extra locating teeth	UL
EM 5008-1	Side teeth, torque shear head, extra locating teeth, #6 AWG through clip	
EM 5008-03	Side teeth, torque shear head, extra locating teeth, finger washer	

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com



Clamps, Clips and Eyes

LASHING WIRE CLAMP

The EMC lashing wire clamp is used for telco and CATV aerial plant to terminate and hold the end of the lashing wire, either at an interruption in continuity or at the end of the lashing wire coil. Also used to hang terminals and splice cases from strand.

- Works with 1/4" (6.6M) to 7/16" (16M) messenger strand.
- Mechanically galvanized for superior corrosion resistance.
- Functional equivalent to the "D" lashing wire clamp.

Catalog Number	Description
EM 8009	Lashing Wire Clamp

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

WIRE ROPE CLIPS

Body of each clip is galvanized ductile iron designed to fit the strand, which is protected by smooth-rounded contact surfaces. Bolts are made of high-strength steel.

Catalog Number	Strand Size Inches	Approx Ship Wt Each (lbs)
6480	1/4	0.13
6481	5/16	0.14
6482	3/8	0.23
6484	1/2	0.50
6485	5/8	1.11



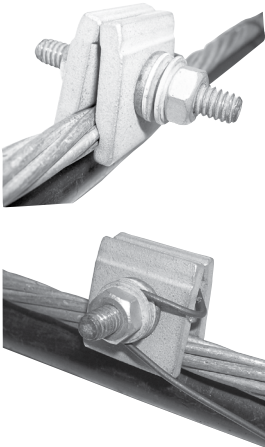
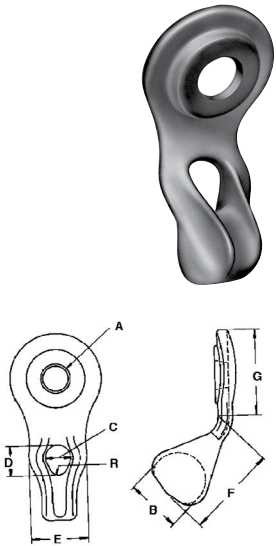
No. 6485

(1) RUS listed

ANGLE THIMBLEYE® EYE

Used for attaching to thru-bolt or threaded end of straight or angle Thimbleye bolt for down guying. Rounded groove protects guy strand from sharp bending and kinking. Drop-forged galvanized steel. Construction for high-strength application.

Catalog Number	Dimensions Inches									Approx Ship Wt Each (lbs)
	For Bolt Diameter	Mtg. Bolt Hole A	B	C	D	E	F	G	R	
0100 ⁽¹⁾	5/8	1 1/16	1 1/2	1 1/16	1 3/16	1 5/8	2 1/2	2 1/2	9/32	1.20
0101	3/4	1 3/16	1 1/2	1 1/16	1 3/16	1 5/8	2 1/2	2 1/2	9/32	1.32



Clamps, Clips and Eyes

GUY WIRE THIMBLES

Open end slips over ovaleye anchor rods and bolts. Grooved to fit various strand sizes, they are made from crescent-shaped stock to prevent abrupt, strand-wakening kinks.






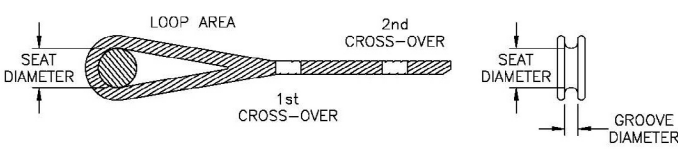
Catalog Number	Strand Size (in)	Approx Ship Wt Each (lbs)
6593	$\frac{3}{8}$	0.09
6594	$\frac{1}{2}$	0.15
6595	$\frac{5}{8}$	0.30



No. 6593

Deadends, Guy Wire

HARDWARE RECOMMENDATIONS & DIMENSIONS FWDE & AWDE

Recommended Fittings			
Pole Fittings	Anchor Heads	Anchor Rods	Guy Strain Insulators
			 <div> ANSI 54-1 54-2 54-3 54-4 </div>
Fittings We Do Not Recommend		Dimensioning	
			

Galvanized Steel Deadends	Aluminized Steel Deadends	Galvanized / Aluminized Steel Sizes	Minimum Seat Diameter, 1st Cross-Over Mark	Maximum Seat Diameter, 1st Cross-Over Mark	Maximum Seat Diameter, 2nd Cross-Over Mark	Minimum Groove Diameter (in)	Min. Hole Diameter for Anchor Rods (in)
FWDE1102		3/16	1	1-3/4	2-1/2	1/4	3/8
FWDE1103		7/32	1-1/8	1-3/4	2-1/2	5/16	3/8
	AWDE4110	7#12, 6M, 3#9	1-1/8	1-3/4	2-1/2	5/16	7/16
FWDE1104		1/4	1-1/8	1-3/4	2-1/2	5/16	7/16
	AWDE4113	3#8, 8M, 7#11	1-1/8	1-3/4	2-1/2	3/8	1/2
FWDE1105		9/32	1-1/8	1-3/4	2-1/2	3/8	1/2
	AWDE4116	3#7, 10M, 7#10	1-1/4	1-3/4	2-1/2	3/8	9/16
FWDE1106		5/16	1-1/4	1-3/4	2-1/2	3/8	9/16
	AWDE4119	3#6, 12.5M, 7#9	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4120	14M	1-3/8	1-3/4	2-1/2	7/16	5/8
FWDE1107		3/8	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4122	3#5, 16M, 7#8	1-3/8	1-3/4	2-1/2	7/16	5/8
	AWDE4124	18M	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4125	7#7	1-3/8	2-3/8	2-1/2	1/2	11/16
FWDE1108		7/16	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4126	20M	1-3/8	2-3/8	2-1/2	1/2	11/16
	AWDE4128	7#6	1-3/8	2-3/8	----	9/16	3/4
FWDE2115		1/2	1-3/8	2-3/8	----	9/16	3/4
	AWDE4130	25M	1-1/2	2-5/8	----	5/8	15/16
	AWDE4131	7#5	1-1/2	2-5/8	----	5/8	15/16
FWDE2116		9/16	1-1/2	2-5/8	----	5/8	15/16

Deadends, Guy Wire

FORMED WIRE GALVANIZED STEEL GUY WIRE

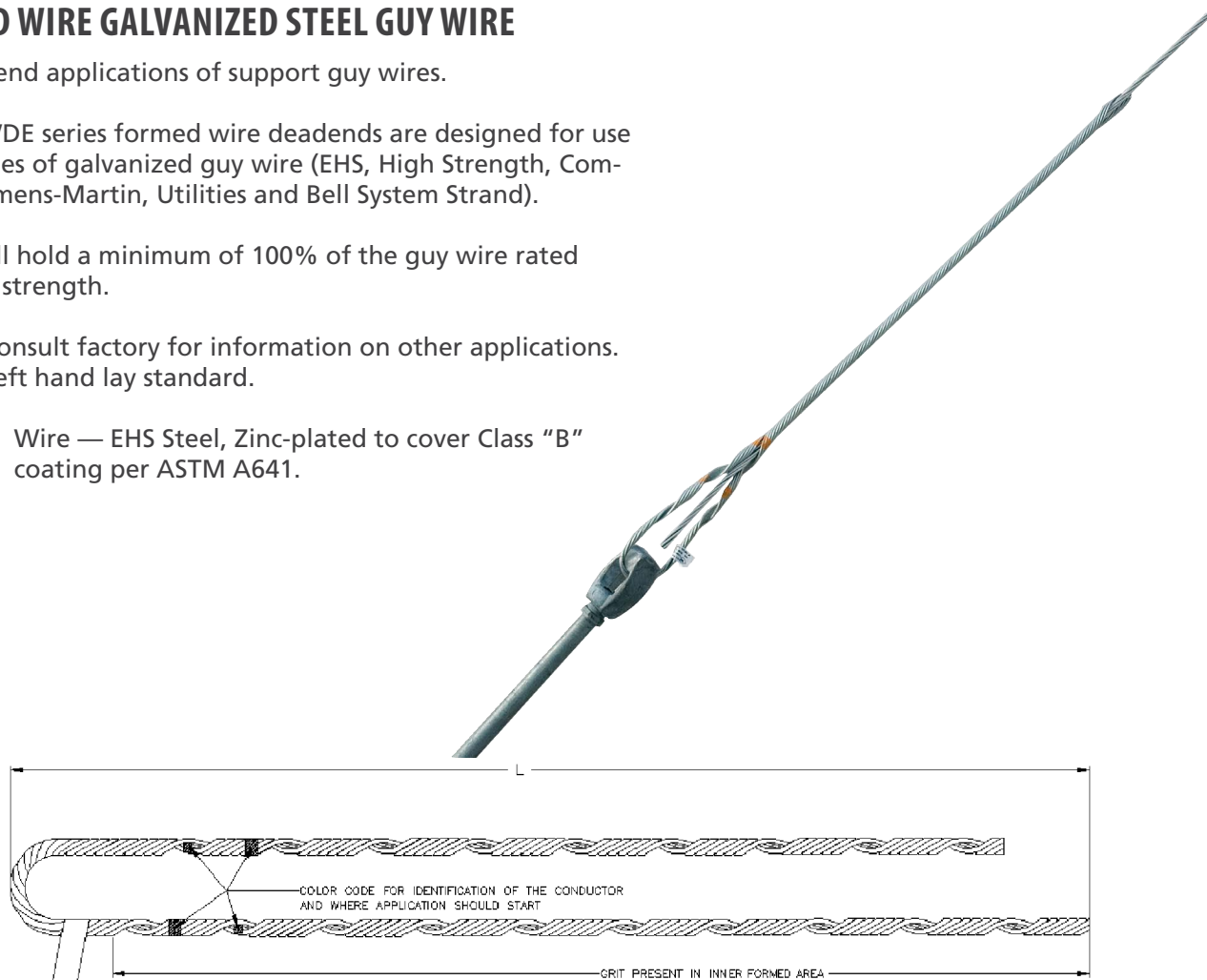
For deadend applications of support guy wires.

Fargo FWDE series formed wire deadends are designed for use on all types of galvanized guy wire (EHS, High Strength, Common, Siemens-Martin, Utilities and Bell System Strand).

FWDE will hold a minimum of 100% of the guy wire rated breaking strength.

Note: Consult factory for information on other applications.
Left hand lay standard.

Material: Wire — EHS Steel, Zinc-plated to cover Class "B" coating per ASTM A641.



FWDE

CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	NOMINAL LENGTH (L)		DIAMETER RANGE IN (MM)		COLOR CODE	PACKAGING PER BOX	
			IN	MM	MIN	MAX		UNITS	WEIGHT LBS. (KG)
FWDE1102	3/16"	3,990 (17.7)	20	508	0.174 (4.41)	0.203 (5.16)	Red	150	30 (13.6)
FWDE1103	7/32"	5,400 (24.0)	24	610	0.204 (5.18)	0.230 (5.84)	Green	50	19 (8.6)
FWDE1104**	1/4"	6,650 (29.6)	25	635	0.231 (5.87)	0.259 (6.58)	Yellow	50	24 (10.9)
FWDE1105	9/32"	8,950 (39.8)	28	711	0.260 (6.60)	0.291 (7.39)	Blue	50	26 (11.8)
FWDE1106**	5/16"	11,200 (49.8)	31	787	0.292 (7.42)	0.336 (8.53)	Black	50	41 (18.6)
FWDE1107**	3/8"	15,400 (68.5)	35	891	0.337 (8.56)	0.394 (10.01)	Orange	50	53 (24.0)
FWDE1108**	7/16"	20,800 (92.5)	38	965	0.395 (10.03)	0.474 (12.04)	Green	25	36 (16.3)
FWDE2115	1/2"	26,900 (119.7)	49	1245	0.475 (12.07)	0.515 (13.08)	Blue	20	67 (30.4)
FWDE2116	9/16"	35,000 (155.7)	55	1397	0.516 (13.11)	0.570 (14.48)	Yellow	10	48 (21.8)

NOTES: All dimensions: inches (mm) unless otherwise noted.

Rated at full tension of guy strand RBS for EHS, HS, Siemens-Martin, Common and Utility Grades.

** RUS Technically Accepted.

Deadends, Guy Wire

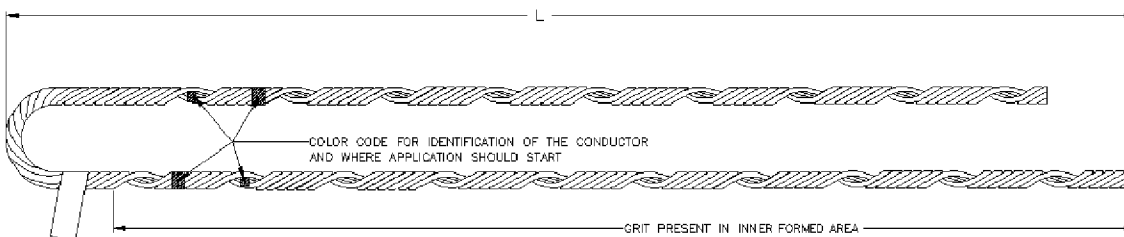
FORMED WIRE GUY WIRE BEZINAL® COATED STEEL

For deadend applications for support of guy wires.

Fargo BDE series formed wire deadends are designed for use on Bezinal® strand.

BDE will hold a minimum of 100% of the guy wire rated breaking strength.

Note: Left hand lay standard.



BDE

CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	NOMINAL LENGTH (L)		DIAMETER RANGE IN (MM)		COLOR CODE	PACKAGING PER BOX	
			IN	MM	MIN	MAX		UNITS	WEIGHT LBS (KG)
BDE9102	3/16"	3,900 (17.3)	20	508	0.174 (4.41)	0.203 (5.16)	Red	100	30 (13.6)
BDE9104	1/4"	6,650 (29.6)	25	635	0.231 (5.87)	0.259 (6.58)	Yellow	50	23 (10.5)
BDE9106	5/16"	11,200 (49.8)	31	787	0.292 (7.42)	0.336 (8.53)	Black	50	39 (17.7)
BDE9107	3/8"	15,400 (68.5)	35	891	0.337 (8.56)	0.394 (10.01)	Orange	50	51 (23.2)
BDE9108	7/16"	20,800 (92.5)	38	965	0.395 (10.03)	0.474 (12.04)	Green	25	40 (18.2)

NOTES: All dimensions: inches (mm) unless otherwise noted.
Bezinal is a registered trademark of Bekaert Company

Deadends, Guy Wire

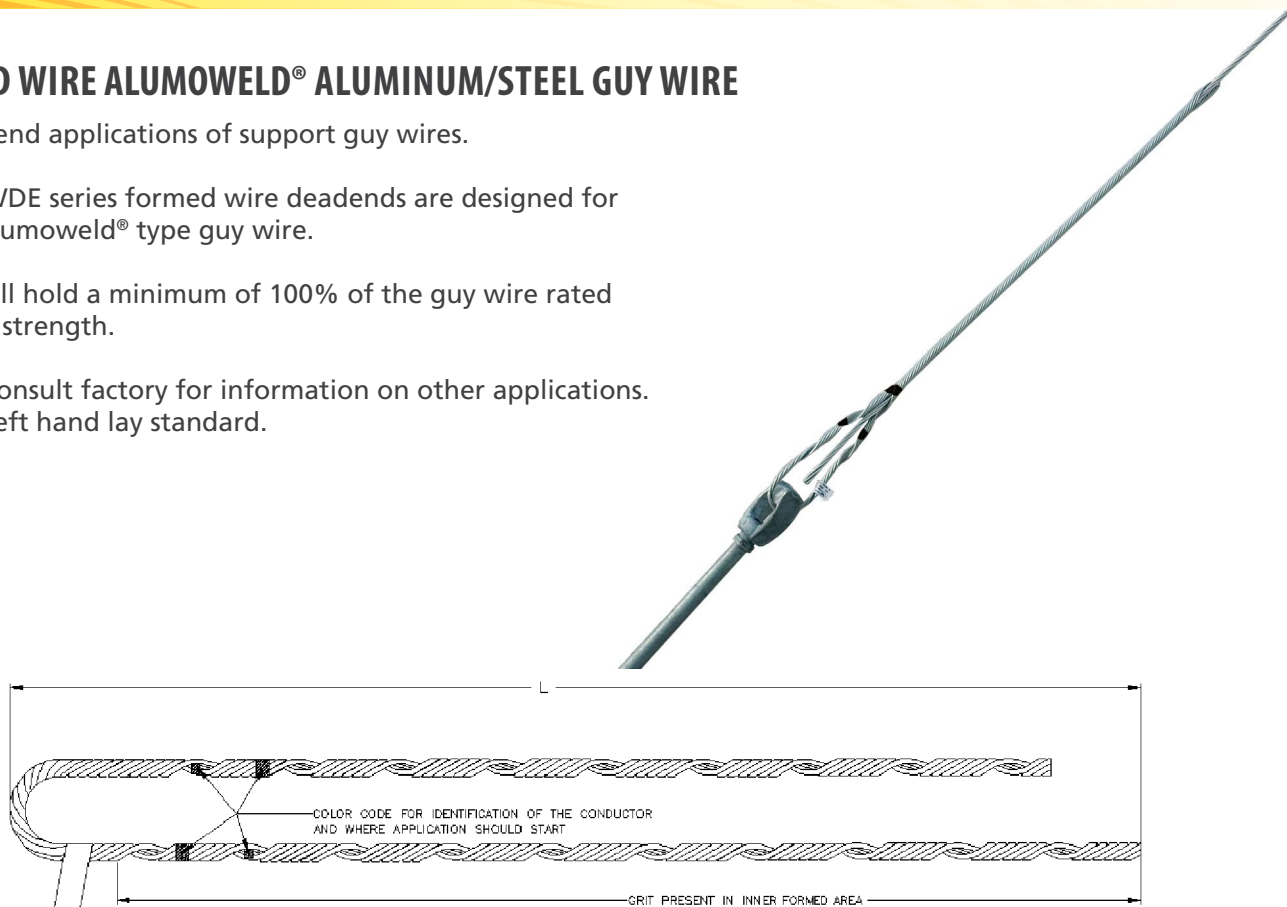
FORMED WIRE ALUMOWELD® ALUMINUM/STEEL GUY WIRE

For deadend applications of support guy wires.

Fargo AWDE series formed wire deadends are designed for use on Alumoweld® type guy wire.

AWDE will hold a minimum of 100% of the guy wire rated breaking strength.

Note: Consult factory for information on other applications.
Left hand lay standard.



AWDE

CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	NOMINAL LENGTH (L)		DIAMETER RANGE IN (MM)		COLOR CODE	PACKAGING PER BOX	
			IN	MM	MIN	MAX		UNITS	WEIGHT LBS (KG)
AWDE4110 **	6M, 3#9	6,000 (26.7)	22	559	0.231 (5.87)	0.259 (6.58)	Yellow	50	20 (9.1)
AWDE4113 **	3#8, 8M	8,000 (35.6)	24	610	0.260 (6.60)	0.291 (7.39)	Blue	50	20 (9.1)
AWDE4116 **	3#7, 10M, 7#10	10,000 (44.5)	26	660	0.292 (7.42)	0.336 (8.53)	Black	50	30 (13.6)
AWDE4119 **	3#6, 12.5M, 7#9	12,500 (55.6)	29	737	0.337 (8.56)	0.360 (9.14)	Yellow	50	33 (14.8)
AWDE4120 **	14M	14,000 (62.3)	31	787	0.361 (9.17)	0.384 (9.75)	Blue	50	53 (24.0)
AWDE4122 **	3#5, 16M, 7#8	16,000 (71.2)	32	813	0.385 (9.78)	0.410 (10.41)	Orange	50	55 (25.0)
AWDE4124	18M	18,000 (80.1)	34	864	0.411 (10.44)	0.430 (10.92)	Black	25	29 (13.2)
AWDE4125	7#7	20,000 (89.0)	36	914	0.431 (10.95)	0.474 (12.04)	Green	25	32 (14.5)
AWDE4126 **	20M	20,000 (89.0)	36	914	0.431 (10.95)	0.474 (12.04)	Yellow	10	22 (10.0)
AWDE4128	7#6	22,730 (101.1)	40	1016	0.475 (12.07)	0.515 (13.08)	Blue	10	23 (10.5)
AWDE4130	25M	25,000 (111.2)	43	1092	0.516 (13.11)	0.535 (13.59)	Red	10	31 (14.1)
AWDE4131	7#5	27,030 (120.2)	45	1143	0.536 (13.61)	0.570 (14.48)	Yellow	10	32 (14.5)

NOTES: All dimensions: inches (mm) unless otherwise noted.
Rated at 100% of guy strand RBS for Alumoweld®.
Alumoweld is a registered trademark of AFL Corporation.
** RUS Technically Accepted.

Deadends, Guy Wire

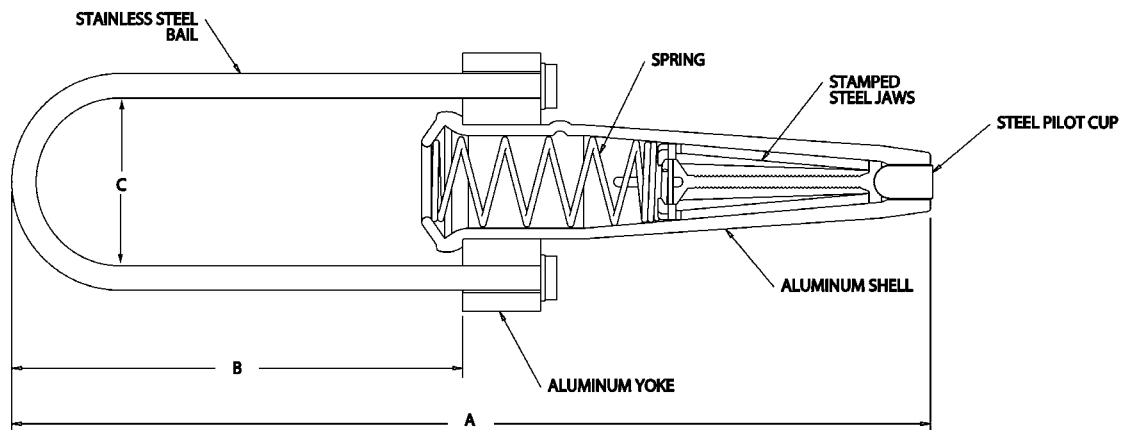
AUTOMATIC ALUMINUM GUY WIRE DEADENDS

Fargo GDE5100 Series Automatic deadends are designed for use on High Strength, Common, Siemens-Martin, Utilities and Bell System Strand.

Rating: 90% of conductor breaking strength

Note: Consult factory for information on other applications.

Material: Gripping Unit – Stainless Steel
Yoke – Aluminum Alloy
Bail – Stainless Steel



GDE5100								
CATALOG NUMBER	PRIMARY STRAND APPLICATION	TO BE USED WITH:			RANGE IN. (MM)	DIMENSIONS IN. (MM)		
		EHS	AW / AWAC	HS, COM, S-M, UTIL, BELL		A	B	C
GDE5100	1/4" HS, Com, S-M, Util, Bell			•	0.240-0.253 (6.11-6.44)	9.2 (234)	5.7 (145)	1.4 (36)
GDE5100L	1/4" HS, Com, S-M, Util, Bell			•	0.240-0.253 (6.11-6.44)	12.7 (234)	9.2 (234)	1.4 (36)
GDE5101	5/16" HS, Com, S-M, Util, Bell			•	0.310-0.335 (7.89-8.53)	9.3 (236)	5.6 (142)	1.5 (38)
GDE5101L	5/16" HS, Com, S-M, Util, Bell			•	0.310-0.335 (7.89-8.53)	13.1 (333)	9.5 (241)	1.5 (38)
GDE5102	3/8" HS, Com, S-M, Util, Bell			•	0.360-0.405 (9.16-10.31)	11.5 (292)	7.1 (180)	2.0 (51)
GDE5102L	3/8" HS, Com, S-M, Util, Bell			•	0.360-0.405 (9.16-10.31)	16.5 (419)	12.0 (305)	2.0 (51)

NOTE: Suffix "L" denotes extended ball.

Deadends, Guy Wire

AUTOMATIC ALUMINUM GUY WIRE DEADENDS

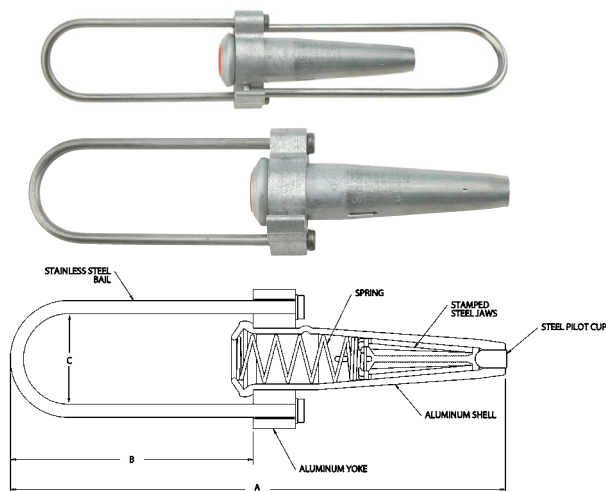
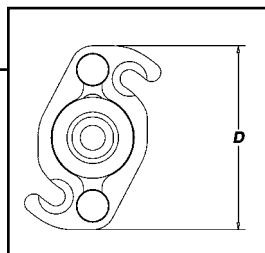
Fargo GDE5200 Series Automatic deadends are designed for use on all grades of galvanized steel wire strand ... High Strength, Extra High Strength, Alumoweld®, Aluminized, Common, Siemens-Martin, Utilities and Bell System Strand.

Rating: 90% of conductor breaking strength

Innovative yoke design allows for installation without use of a gripping hook.

Note: Consult factory for information on other applications.

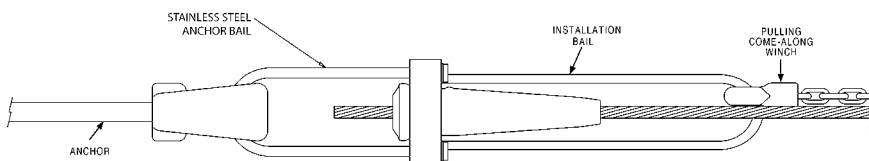
Material: Gripping Unit — Stainless Steel



GDE5200

CATALOG NUMBER	PRIMARY STRAND APPLICATION	TO BE USED WITH:			RANGE IN. (MM)	DIMENSIONS IN. (MM)			
		EHS	AW / AWAC	HS, COM, S-M, UTIL, BELL		A	B	C	D
GDE5199	3/16"EHS (2.8M3) AW	•	•	•	0.145-0.215 (3.68-5.46)	10.0 (254)	5.7 (145)	1.6 (41)	2.7 (69)
GDE5200	1/4"EHS 7#12 (6M) AW	•	•	•	0.215-0.270 (5.46-6.86)	10.2 (259)	5.7 (145)	1.6 (41)	2.7 (69)
GDE5200L	1/4"EHS 7#12 (6M) AW	•	•	•	0.215-0.270 (5.46-6.86)	13.9 (353)	9.4 (239)	1.6 (41)	2.7 (69)
GDE5201	5/16"EHS 7#10 (10M), 7#11 (8M) AW	•	•	•	0.270-0.315 (6.86-8.00)	10.3 (262)	5.5 (140)	1.8 (46)	2.8 (71)
GDE5201L	5/16"EHS 7#10 (10M), 7#11 (8M) AW	•	•	•	0.270-0.315 (6.86-8.00)	15.6 (396)	10.8 (274)	1.8 (46)	2.8 (71)
GDE5202	3/8"EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC®	•	•	•	0.325-0.392 (8.26-9.96)	13.0 (330)	7.1 (180)	2.1 (53)	3.5 (89)
GDE5202L	3/8"EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC®	•	•	•	0.325-0.392 (8.26-9.96)	16.8 (427)	11.0 (279)	2.1 (53)	3.5 (89)
GDE5203	7/16"EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC®	•	•	•	0.392-0.458 (9.96-11.63)	15.0 (381)	8.2 (208)	2.1 (53)	3.5 (89)
GDE5203L	7/16"EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC®	•	•	•	0.392-0.458 (9.96-11.63)	18.7 (475)	12.3 (312)	2.1 (53)	3.8 (97)
GDE5204	1/2"EHS EHS, 25M AW #1-2/5, 1/0-3/4, #2/0-5/2 AWAC, #2/0-4/3 AWAC	•	•	•	0.455-0.520 (11.56-13.21)	16.0 (406)	10.3 (262)	2.1 (53)	4.1 (104)
GDE5204L	1/2"EHS EHS, 25M AW #1-2/5, 1/0-3/4, #2/0-5/2 AWAC, #2/0-4/3 AWAC	•	•	•	0.455-0.520 (11.56-13.21)	20.1 (511)	14.5 (368)	2.1 (53)	4.1 (104)

INSTALLATION BAIL	PART NO.
Bail for GDE5199	PS3005200
Bail for GDE5200 / GDE5200L	PS3005200
Bail for GDE5201 / GDE5201L	PS3005521
Bail for GDE5202 / GDE5202L	3005152
Bail for GDE5203 / GDE5203L	3005527
Bail for GDE5204 / GDE5204L	PS3005524



Typical Installation with 2nd Bail

NOTES: Suffix "L" denotes extended bail.

Alumoweld® is a registered trademark of the United States Alumoweld Company, LLC (AFL).

AWAC® is a registered trademark of Fushi Copperweld Inc.

Eyes

AUXILIARY EYE

Adds additional guy attachment to existing anchor rod. Also can be used as a pulling eye for guying tension.



Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Anchor Rod Diameter	Maximum Strand Size	Thimble Diameter	
BB155A	5/8" - 1"	1/2"	1 1/2"	2.70

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. U-Bolts .5" diameter.

Connector

B STRAND CONNECTOR

Interlocks two strands ranging from 3/16" to 1/2". Accommodates maximum 1/2" diameter strand. Smooth thimble seating surface.

Catalog Number	Length	Width	Seating Diameter	Approx. Ship wt. per each
PSC2080286	2.65"	2.5"	1.8"	1.2 lbs



Eyelets and Eyes

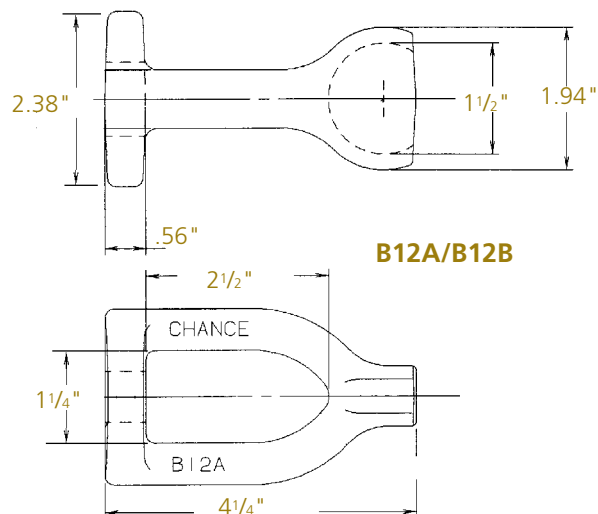
BOLT EYELETS

Slotted hole design allows thru-bolt to be inserted from eye side; not threaded.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Mounting Bolt Diameter	Maximum Strand Size	
B14A ⁽¹⁾	5/8	—	1.00
B14B	3/4	—	1.00
B12A	5/8	5/8	1.37
B12B	3/4	5/8	1.37

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153. Contact Hubbell Power Systems for round bolt hole design.

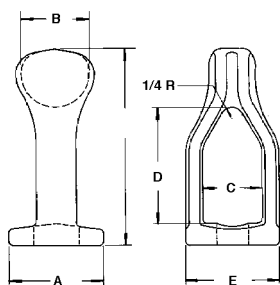
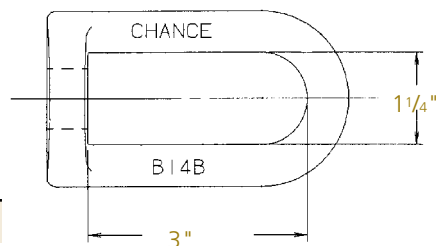
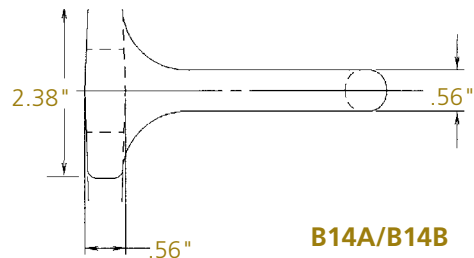
(1) RUS listed.



THIMBLEYE® EYELETS

Used on ordinary machine bolts for straight-away guys. Rounded groove protects guy strand from sharp kinks and bends. Drop-forged galvanized steel. Construction for high-strength applications.

Catalog Number	Dimensions Inches								Approx Ship Wt Each (lbs)
	For Bolt Diameter	Mtg. Bolt Hole A	A	B	C	D	E	F	
6519	5/8	1 1/16 X 1	2 1/16	1 1/2	1 5/16	2 9/16	2 1/16	4 5/16	1.23
6520	3/4	1 3/16 X 1 1/8	2 1/16	1 1/2	1 5/16	2 9/16	2 1/16	4 5/16	1.30



No. 6519

Eyenuts

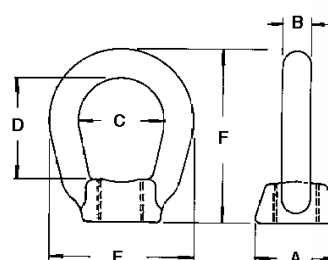
STANDARD EYENUTS

Most commonly used for deadending, back-guying and attaching pole head guys on the threaded ends of crossarm bolts. Drop-forged, hot-dip galvanized steel.

Catalog Number	Dimensions Inches							Approx Ship Wt Each (lbs)
	For Bolt Diameter	A	B	C	D	E	F	
6500	1/2	1 1/4	1/2	1 1/8	1 1/8	2 1/8	2 5/8	0.51
6501	5/8	1 1/4	1/2	1 1/8	1 1/8	2 1/8	2 5/8	0.46
6502 ⁽¹⁾⁽²⁾	5/8	1 3/8	1/2	1 1/2	1 3/4	2 1/2	3	0.63
6503 ⁽²⁾	3/4	1 3/8	1/2	1 1/2	1 3/4	2 1/2	3	0.54

(1) RUS listed.

(2) ANSI standard, C-135.5.



No. 6502

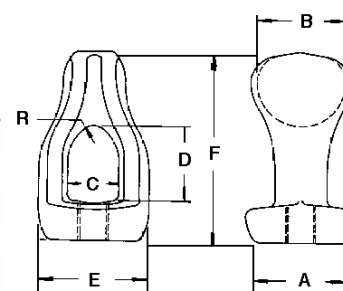
THIMBLEYE® EYENUTS

For attaching to thru-bolts or threaded end of straight or angle Thimbleye bolts for straight-away head guys. Drop-forged galvanized steel. Nuts are contoured to minimize bending and kinking of guy strand.

Catalog Number	Tapped For Bolt	Dimensions Inches							Approx Ship Wt Each (lbs)
		A	B	C	D	E	F	R	
6510 ⁽¹⁾⁽²⁾	5/8	1 1/2	1 1/2	7/8	1 3/8	1 7/8	3 1/4	1/4	0.78
6511 ⁽²⁾	3/4	1 1/2	1 1/2	7/8	1 3/8	1 7/8	3 1/4	1/4	0.72
400162921	3/4	1 1/2	1 5/8	7/8	1 3/8	1 7/8	3 1/4	1/4	0.78
6512	1	1 1/8	1 5/8	1 1/8	1 13/32	2 5/64	3 1/4	1 1/32	1.80
400290995	1	1 1/4	1 1/2	1 1/8	1 1/2	2 5/64	4	1 1/32	1.84

(1) RUS listed.

(2) ANSI standard, C-135.5.



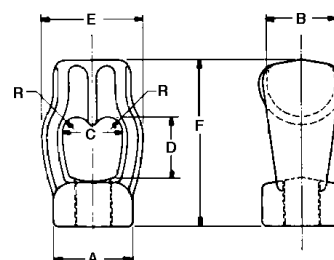
No. 6510

TWINEYE® EYENUTS

Used for head or stub guying of two strands, Twineye Eyenuts can be attached to thru-bolts or threaded end of straight or angle Thimbleye bolts. Grooves are contoured to protect guy strands. Drop-forged galvanized steel.

Catalog Number	Tapped For Bolt	Dimensions Inches							Approx Ship Wt Each (lbs)
		A	B	C	D	E	F	R	
6560	5/8	1 7/8	1 1/16	1 1/8	1 5/16	2 3/8	3 3/8	1 5/16	1.90
6561	3/4	1 7/8	1 1/16	1 1/8	1 5/16	2 3/8	3 3/8	1 5/16	1.84
6562 ⁽¹⁾	1 and PISA	1 7/8	1 1/16	1 1/8	1 5/16	2 3/8	3 3/8	1 5/16	1.88

(1) Catalog Number 6562 eyenut fits both 1" bolts and 1" PISA rods.



No. 6562

Guards

RISER POLE CABLE GUARDS

Protect telephone and power lines where circuits lead from underground to overhead.

Guards - Steel

Guards are 14-gauge hot-dip galvanized steel, formed into "U" shape.

Catalog Number	Inside Diameter (in)	Length (ft)	Approx Ship Wt Each (lbs)
C2030450	3/4	8	4.80
6531 ⁽¹⁾	1 1/8	5	4.80
653112 ⁽¹⁾	1 1/8	8	5.60
6532 ⁽¹⁾	2 3/16	5	8.60
6533 ⁽¹⁾	2 3/16	8	12.60
6534T	3 3/16	5	15.25
6535	3 3/16	8	18.00
C2030451	3 11/16	8	22.69
400314340 ⁽²⁾	1 1/8	5	4.70
400314357 ⁽²⁾	1 1/8	8	7.50
C2030452	3/4	5	2.76
701012478	6	8	35.00

(1) RUS listed.

(2) Booted

Mounting Straps

Straps are made from hot-dip galvanized flat steel, shaped to fit steel guards. Straps not needed for polyethylene guards.

Catalog Number	Used with Guard Number	Dimensions Inches		Approx Ship Wt Each (lbs)
		Steel Size	Hole Diameter	
6538 ⁽¹⁾	6531 & 653112	1/8 x 3/4	9/32	0.13
6539 ⁽¹⁾	6532 & 6533	1/8 x 3/4	9/32	0.24
6540 ⁽¹⁾	6534T & 6535	3/16 x 1	11/32	0.64
C2030455	C2030450 C2030452	3/32 x 3/4	9/32	0.66
C2030456	C2030451	3/16 x 1	11/32	0.69
400314753	C203-0455 C203-0450	9/100 x 3/4	9/32	0.06
400314092 ⁽¹⁾	6531 & 6531	13/100 x 3/4	9/32	0.13
400314761		13/100 x 3/4	9/32	0.14
400314779 ⁽¹⁾	6532 & 6533	13/100 x 3/4	9/32	0.24
400314787	6534T & 6535	19/100 x 1	11/32	0.64
400314795	C203-0451	19/100 x 1	11/32	0.60
401370598	701012478	19/100 x 1	13/32	1.12
401370606	701012478	19/100 x 1	13/32	1.41

(1) RUS listed.



No. 653112



No. 6538

Guards

RISER POLE CABLE GUARDS *(continued)*

Guards - Polyethylene

Gray plastic, in a flanged "U" shape with 8 mounting holes per side. One end is belled to allow for overlap with an adjacent cable guard.

Catalog Number	Inside Diameter (in)	Length (ft)	Approx Ship Wt Each (lbs)
PSC2030546	1	10	2.41
PSC2030547	2	5	2.78
PSC2030548	2	10	4.80
PSC2030549	3	5	4.76
PSC2030550	3	10	7.40
PSC2030551	4	5	4.00
PSC2030552	4	10	11.90
PSC2030553	5	5	8.89
PSC2030554	5	10	12.00
PSC2030555	6	5	9.17
PSC2030556	6	10	18.96
PSC2030568	8	5	11.69



No. PSC2030547



No. PSC2030557

Adapter Boots

Gray plastic polyethylene adapter for cable guards.

Catalog Number	For Cable Guard Size (in)	No. of Mounting Holes	Approx Ship Wt Each (lbs)
PSC2030557	1-2	4	2.28
PSC2030558	2-5	8	4.86



No. DU1P2

Riser Shield - Backing Plate

U-Cable guards protect cable where circuits lead from underground to overhead on riser poles applications. Four welded tabs on each side permit attachment with 1/2" lag screws.

Catalog Number	Description	Approx Ship Wt Each (lbs)
DU1P2	Riser Shield	31.00
DU3P1	Backing Plate	13.60



No. DU3P1

Guards

RISER POLE CABLE GUARDS *(continued)*

Back Plate

Polyethylene back plate for cable guard. Back plates are gray plastic with 3 mounting holes.

Catalog Number	For Cable Guard Width (in)	For Cable Guard Length (ft)	Approx Ship Wt Each (lbs)
PSC2030559	2	5	0.80
PSC2030560	2	10	1.60
PSC2030561	3	5	1.32
PSC2030562	3	10	2.62
PSC2030563	4	5	1.64
PSC2030564	4	10	3.31
PSC2030565	5	5	2.51
PSC2030566	5	10	4.91
PSC2030567	6	5	3.17



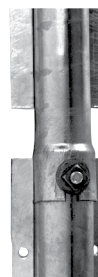
No. PSC2030559

RISER POLE CABLE GUARDS

Flanged one-piece unit is formed of 14-gauge steel. Hot-dip galvanized. Extension is flared at one end so that it can be joined to the base section. A carriage bolt fastens the two sections together and also serves as a ground lead attachment point. Mounting holes in 1" wide flanges are located every 25". Straps are not needed for installation.

Cable Guards

Catalog Number	Overall Length ft	Dimensions Inches		Approx Ship Wt Each (lbs)
		Inside Diameter	Inside Clearance from Face of Pole	
C2030033	9	2	1 7/8	19.00
C2030034	9	3	2 7/8	26.00
C2030035	9	3 1/2	3 3/8	28.00



No. C2030033

Cable Guard Extensions

Catalog Number	Overall Length ft	Dimensions Inches		Approx Ship Wt Each (lbs)
		Inside Diameter	Inside Clearance from Face of Pole	
C2030036	5	2	1 1/2	10.00
C2030037	5	3	2 7/8	14.00



Guy Attachments

GUY HOOKS FOR WRAPPED GUY APPLICATIONS

6584 guy hook is used in wrapped guy applications to prevent wire from creeping downward. Catalog Numbers 5001 and 5004 are used in down guy applications. Hooks should be used under bolt heads for maximum shear strength.

Catalog Number	Description	Dimensions Inches		Approx Ship Wt Each (lbs)
		Material Size	Hole Diameter	
5001	2-Bolt Storm	¼ x 1½ x 7	9⁄16 & 13⁄16	1.08
5004 ⁽¹⁾	1-Bolt Storm, ¾" R	¼ x 1½ x 4½	11⁄16	0.79
6584 ⁽¹⁾	1-Bolt Standard	7⁄16 x 1¾ x 4	11⁄16	0.85

(1) RUS listed.



No. 6584



No. 5004

AERIAL
INSTALLATION



Guy Attachments

GUY HOOKS FOR DOWN OR SPAN GUY APPLICATIONS

Use in down or span guy applications. Spurs resist down slotting. The overturning action is resisted by the wide lower curved heel pad. Guy Hooks are available without cleats for use on non-wood poles.

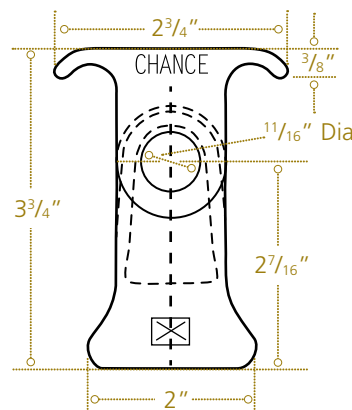
Catalog Number	Minimum Ultimate Tensile Strength lb	Dimensions Inches			Approx Ship Wt Each (lbs)
		Thru-Bolt Diameter	Max Guy Strand	Lag Screw Diameter	
400149910	10,000	$\frac{5}{8}$	$\frac{7}{16}$	—	1.52
GH151A	12,400	$\frac{5}{8}$	$\frac{7}{16}$	—	0.62
GH5 ⁽¹⁾ *	12,400	$\frac{5}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	1.30
GH5ILS	12,400	$\frac{5}{8}$	$\frac{7}{16}$	—	1.39
400149928	15,000	$\frac{3}{4}$	$\frac{5}{8}$	—	1.73
GH6 *	18,350	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	1.50
GH6ILS	18,350	$\frac{3}{4}$	$\frac{1}{2}$	—	1.53
GH6X	25,400	$\frac{7}{8}$	$\frac{5}{8}$	$\frac{1}{2}$ or $\frac{3}{4}$	2.40
GH6XBILS	33,500	1	$\frac{5}{8}$	—	2.25

NOTE: Suffix "ILS" indicates cast in integral lag. Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.

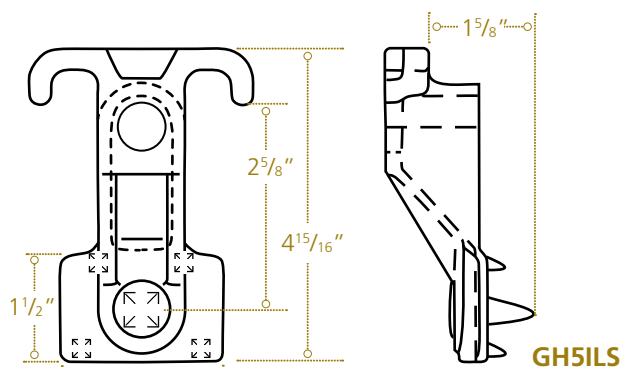
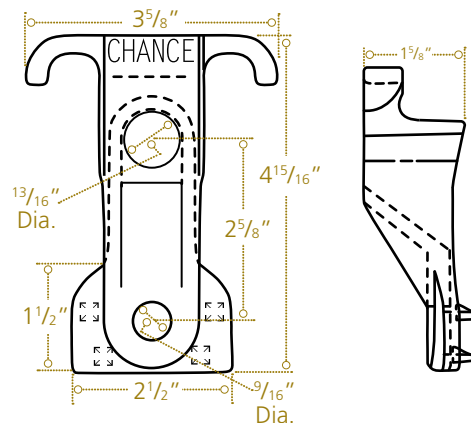
(1) RUS listed.

* GH5 and GH6 are available without cleats for non-wood poles. Add "N" suffix to catalog number.

GH151A



GH6



GUY HOOK SPAN TYPE

For guy attachment, use at angles 0° to 30° from horizontal.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Max Thru-Bolt Diameter	Max Guy Strand Diameter	
GH2	$\frac{5}{8}$	$\frac{1}{2}$	0.66
GH3	$\frac{3}{4}$	$\frac{1}{2}$	0.64

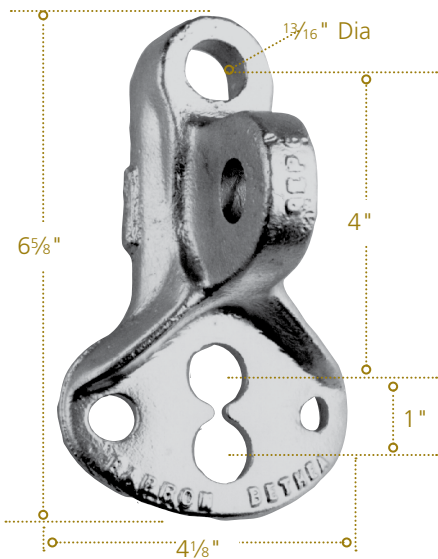
NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.



GH2

Guy Attachments

POLE EYE PLATE



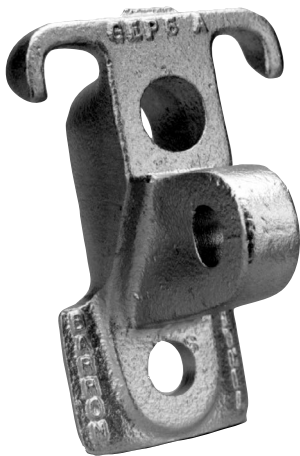
The GEP6 style Eye Plate provides a large pad area to spread forces over the pole surface. It is ideal for guy strain insulator installation. Minimum ultimate tension rating is 21,000 lbs. at 90 and 45 degrees.

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Mounting Bolt Diameter	Maximum Pin Diameter	
GEP6	3/4	3/4	2.69

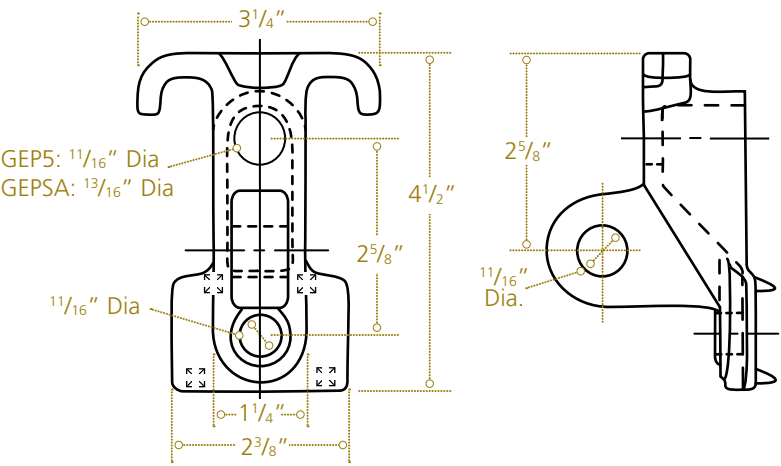
NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.
GEP6 is available for non-wood poles. Catalog number GEP6N.

COMBINATION POLE EYE/GUY HOOK

This combination allows a guy loop to be made up on the ground as well as provides a clevis eye plate capability. Spurs prevent slippage down the pole. Contact HPS Customer Service about eye plates for use on concrete and steel poles.



GEP5



Catalog Number	Minimum Ultimate Tension Strength lb	Dimensions Inches		Approx Ship Wt Each (lbs)
		Mounting Bolt Diameter	Max Strand Size	
GEP5	12,500	5/8	5/8	1.75
GEP5A	16,000	3/4	5/8	1.75
GEP5A34	21,000	3/4	5/8	2.25

NOTE: Ductile iron per ASTM A-536. Hot-dipped galvanized per ASTM A-153.

Guy Markers

FULL ROUND

Increased Visibility

A full 360° of 1½" diameter high-visibility yellow or orange provides increased visibility to children and adults alike. Also available in green or gray for more aesthetically inconspicuous applications. A 2½" diameter marker is also available.

Increased Vandal Resistance

A unique strand trapping design has been added to the security of a concealed pigtail and a self-locking nylon strap. The guy strand passes easily in one direction only — into the marker.

Increased Installation Ease and Range

Easy to install; tough to remove. Simply snap the marker over the guy and lock it in place with the self-locking nylon strap and pigtail. Fits guy strand diameters from ¾" to 1½".

Increased Ruggedness for Demanding Service

The UV-stabilized, high impact, high density polyethylene construction has excellent color retention, cold weather properties and no cutaway sections to weaken its strength.

Decreased Costs

Not only will you save time, but you'll also save money with these exceptionally affordable guy markers.



† Cat. No. C0790263. Reflective 10" long bright orange strip 2' from top of yellow marker for greater visibility. Ideal for heavy snow areas and also for recreational ATV-use areas.

Ordering Information

Yellow	Orange	Dimensions Inches			Std Package	Approx Ship Wt Each (lbs)
		Length	Diameter	Strand Range		
84FRPMYEL	84FRPMORG	84	1½	¾ thru ½	20	1.30
96FRPMYEL ⁽¹⁾	96FRPMORG	96	1½	¾ thru ½	20	1.48
C0790263†	—	96	1½	¾ thru ½	20	1.48

(1) Can be ordered without pigtail, Catalog Number T0790206.

Flame Retardant

Catalog Number Yellow	Dimensions Inches			Per Carton	
	Length	Diameter	Strand Range	Std Package	Approx Ship Wt Each (lbs)
96FRPMRYEL ⁽¹⁾	96	1½	¾ thru ½	20	1.48

(1) RUS listed.

Guy Markers

ECONOMY FULL-ROUND MARKERS

Bright, high-visibility markers neither bleach out to white nor crack from cold temperatures. Made of ultraviolet-stabilized high-density polyethylene, overlapping tube-like design offers full-length coverage. No tools are required for installation. Replaceable standard tie strap allows the markers to be reused. Three holes permit the black self-locking nylon strap (furnished) to secure the lower end in a choice of two attachment methods — either above or over the anchor rod, illustrated above. This fastening design eliminates the cutaway section that would weaken its resistance to breaking. The economy marker is available in high-visibility 8' long, 1 1/8" O.D. and bright yellow sections.

AERIAL
INSTALLATION

Ordering Information					
Catalog Number	Dimensions		Color	Per Carton	
	Length ft	Diameter Inches		Units	Approx Ship Wt Each (lbs)
96FRPE	8	1 1/8	Bright Yellow	25	0.96



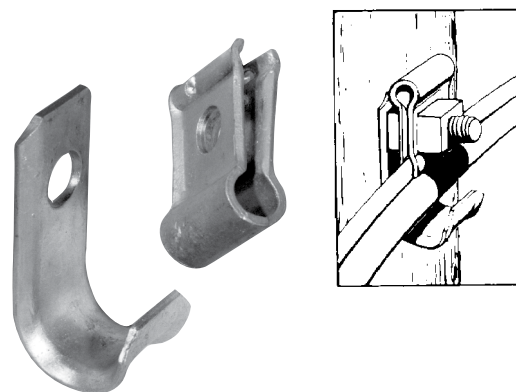
Hangers and Hooks

FIGURE 8 HANGER

Used to support integrated messenger telephone cable – commonly referred to as Figure 8 Cable. Hanger is in two parts, hook and clamp, both galvanized steel. Installed with a ½" machine bolt and two square nuts. One nut is placed between hook and clamp for spacing. The other is used to tighten the clamp member. Order nuts and bolts separately. Accommodates .109 to .134 solid messenger wire.

Figure 8 Cable

Catalog Number	Description	Approx Ship Wt Each (lbs)
PS9015	Hook and Clamp	0.54



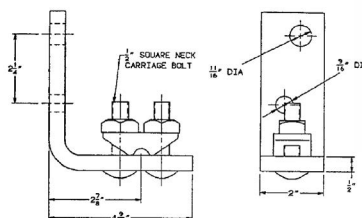
No. PS9015

MESSENGER HANGERS

Used on corners and straight runs, messenger is securely clamped by two ½" carbon-steel guy clamp bolts. Mounted with a ⅝" thru-bolt and a ½" lag screw, neither of which are included. Hot-dip galvanized.

Universal Type

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Steel Size	Ext. From Pole	Strand Size	
7911	½ x 2	4¼	⅝ to ½	3.70



No. 7911

DRIVE AND SCREW HOOKS

These hooks are used to attach wedge-type service drops and deadend clamps to crossarms, poles or buildings. Catalog Number C2050190 Drive Hook is furnished with ⅞" fether drive threads and a pilot point for easy starting. Catalog Number 0317 Screw Hook has ⅜" gimlet threads.

Dimensions Inches

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Thread Diameter	Length	Overall Length	
C2050190	⅞	2½	4¾	0.27
0317	⅜	2	4	0.13



No. C2050190



No. 0317

Molding

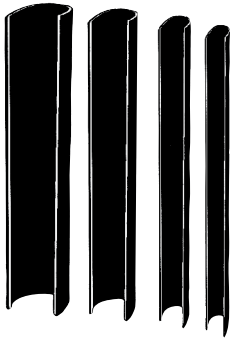
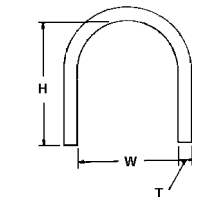
GROUND WIRE MOLDING

KOVER-GARD® molding protects surface ground wires, lead wires and conductors. Flame retardant and easy to install. Makes wood or metal molding obsolete.

KOVER-GARD® Molding							
Catalog Number	Nominal Size Inches	Measurement Inches				Std Package	Approx Ship Wt Each (lbs)
		H	W	T	Std Length		
96KG12	1/2	1/2	1/2	1/16	96	50	0.48
96KG34	3/4	3/4	3/4	1/16	96	50	0.76
96KG1	1	1	1	5/64	96	50	0.96

K-S Straps for fastening covered conductors, conduit or pipe. Anything up to 7/8" O.D., electrical or not.

K-S Straps					
Catalog Number	Dimensions Inches			Pieces Per Carton	Weight Per Carton lb
	Length	Width	Thickness		
KS12 (for 96KG12)	2	5/8	1/16	1,000	6.25
KS34 (for 96KG34)	2 3/8	5/8	5/64	1,000	7.20



K-S Straps

AERIAL
INSTALLATION



Nails and Nuts

POLE DATING NAILS

Used to indicate the year in which poles are set. Heads are $\frac{5}{8}$ " diameter. Hot-dip galvanized. Year determines catalog number.

Catalog Number	For Year	Length Inches	Approx Ship Wt Each (lbs)
PSC2052017	2017	2½	0.05
PSC2052018	2018	2½	0.05
PSC2052019	2019	2½	0.05
PSC2052020	2020	2½	0.05
PSC2052021	2021	2½	0.05
PSC2052022	2022	2½	0.05
PSC2052023	2023	2½	0.05
PSC2052024	2024	2½	0.05



Pole Dating Nail



Palnut Locknut



MF Locknut

NUTS

Made to give tight connections. Galvanized.

M-F Curved Lock Nuts

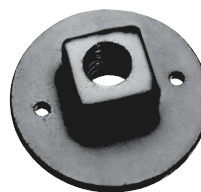
Catalog Number	Bolt Size Inches	Approx Ship Wt Each (lbs)
3510	$\frac{3}{8}$	0.01
3511	$\frac{1}{2}$	0.03
3512	$\frac{5}{8}$	0.05
3513	$\frac{3}{4}$	0.06
3514	$\frac{7}{8}$	0.08
3515	1	0.10

Palnut Lock Nuts

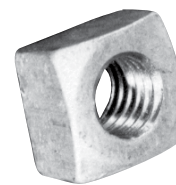
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Bolt Size	Width	Height	
3530	$\frac{3}{8}$	$\frac{5}{8}$.160	0.01
3531	$\frac{1}{2}$	$\frac{13}{16}$.190	0.01
3532	$\frac{5}{8}$	1	.224	0.01
3533	$\frac{3}{4}$	1½	.246	0.02

Washer Nuts

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Accommodates Bolt Size	Width	Thickness	
3193	$\frac{1}{2}$	2	$\frac{13}{16}$	0.18
3194	$\frac{5}{8}$	2½	1	0.41
3195	$\frac{3}{4}$	2¾	1½	0.47



Washer Nut



Regular Square Nut

For Bolts - Regular Square Nuts

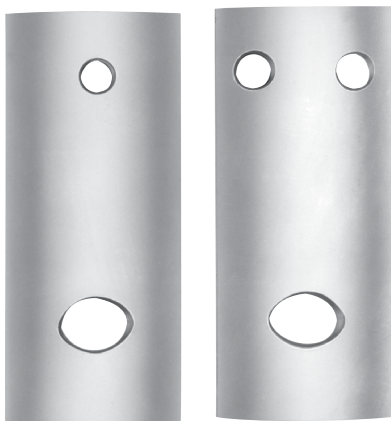
Catalog Number	Bolt Size Inches	Threads Per Inch	Approx Ship Wt Each (lbs)
8600M	$\frac{3}{8}$	16	0.02
55083P	$\frac{1}{2}$	13	0.08
55084P	$\frac{5}{8}$	11	0.10
55085P	$\frac{3}{4}$	10	0.14
56538P	$\frac{7}{8}$	9	0.30
56073P	1	8	0.50

Regular square nuts are not for use on anchor rods

Plates

LIFT AND LOAD PLATES

Used to protect poles on heavy down guying when Thimbleye®, Angle-Thimbleye or Oval-Eye bolts are used through the pole. Hot-dip galvanized.



No. PS7887

No. 7897

Catalog Number	Description	Size Holes Inches		Plate Size Inches	Approx Ship Wt Each (lbs)
		Top	Bottom		
PS7887	2-Hole Lift	$\frac{9}{16}$	$\frac{3}{4} \times 1$	$\frac{3}{16} \times 2\frac{1}{2} \times 7$	0.98
7888	2-Hole Lift	$\frac{9}{16}$	$\frac{7}{8} \times 1$	$\frac{1}{4} \times 2\frac{1}{2} \times 7$	1.26
7897	3-Hole Lift	$\frac{9}{16}$	$\frac{3}{4} \times 1$	$\frac{3}{16} \times 2\frac{1}{2} \times 7$	0.97
7898 ⁽¹⁾	3-Hole Lift	$\frac{9}{16}$	$\frac{7}{8} \times 1$	$\frac{1}{4} \times 2\frac{1}{2} \times 7$	1.26

(1) RUS listed.

STRAIN PLATES

Strain Plates are used to prevent pole from being damaged by guy wire. Nail holes at corners are $\frac{3}{16}$ " diameter. Hot-dip galvanized steel plates are formed to 5" radius.

Catalog Number	Type	Dimensions Inches	Approx Ship Wt Each (lbs)
6575	Standard	4 x 8 x 14 Ga.	1.16



No. 6575

Screws

LAG SCREWS

Lag Screws of 1/4", 3/8" and 1/2" diameter have upset shoulders. Hot-dip galvanized.



Gimlet Point Type



Fetter Drive, Drive-Point



Twist-Drive Pilot Point



B-Cable Suspension Screw



Fetter Drive Pilot-Point Type



Hex Head Lag Screw with Neoprene-Steel Washer

Gimlet Point Type

Catalog Number	Dimensions Inches		Approx Ship Wt Each (lbs)
	Diameter	Length	
872112GP	1/4	1 1/2	0.02
8722GP	1/4	2	0.03
872212GP	1/4	2 1/2	0.04
DF1L3	1/4	3	0.06
DF3L3	3/8	3	0.09

Twist-Drive Pilot Point Type

508500	1/2	4	0.23
PSC2050562	1/2	4 1/2	0.26

Fetter Drive Pilot-Point Type

DF6L250	3/8	2 1/2	0.07
508743	3/8	3	0.10
508744	3/8	4	0.13
508753	1/2	3	0.20
508754	1/2	4	0.24
50875412	1/2	4 1/2	0.27
508755	1/2	5	0.28

B-Cable Suspension Screw

PSC2170146	7/8	4 1/2	1.87
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Hex Head Lag Screw with Neoprene-Steel Washer

PSC2050504	1/4	2	0.03
PSC2050631	1/4	2 1/2	0.04

Sleeves and Fittings

SIDEWALK GUY FITTINGS

These fittings are used along sidewalks or near buildings where space is not available for standard guying. Pole Plate is attached with one $\frac{5}{8}$ " bolt and two $\frac{1}{2}$ " lag screws. End Fittings clamp the strand. Hot-dip galvanized.

Catalog Number	Description	Pipe (in)	Approx Ship Wt Each (lbs)
0501 ⁽¹⁾	Pole Plate	2	4.55
0502 ⁽¹⁾	End Fitting w/Clamp	2	4.95
0512 ⁽¹⁾	End Fitting w/Double Clamp	2	6.20
DG2D1	Pole End Plate	2½	3.72
DG5D1	End Fitting w/ Three Clamps	2½	4.13
DG9D1	Guy Fitting Plate A	2½	4.69

(1) RUS listed.



CABLE SPACERS

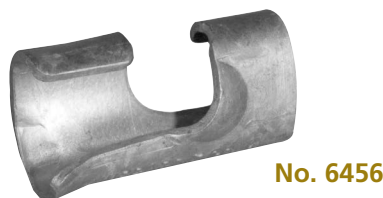
Used to create a space between messenger strand and aerial cable. Black plastic.

Catalog Number	Type	Space Created (in)	Approx Ship Wt Each (lbs)
PSC2080519	Kinsel Saddle	1/2	0.01
PSC2080520	Kinsel Saddle	3/4	0.01
PSC2080420	Bell	1/4	0.01
PSC2080421	Bell	½	0.01
PSC2080422	Bell	¾	0.02
PSC2080423	Bell	1	0.03
PSC2080424	Bell	1½	0.03
PSC2080425	Bell	2	0.04
PSC2080426	Stackable	½" increments	0.02



SLEEVES

For holding down the loose end of guy strand projecting beyond the guy clamp. Chance Serving Sleeves, which have a flared end to speed application, are faster to apply than wire-wrap sleeves. Hot-dip galvanized.



Catalog Number	Dimensions (Inches)		Approx Ship Wt Each (lbs)
	Strand Size	Overall Length	
6452	¼	1¾	0.028
6453	⅝	1½	0.059
6454	¾	1¾	0.073
6455	7/16	2	0.120
6456	½	2¼	0.130

Splices, Guy Wire

FORMED WIRE GALVANIZED STEEL SPLICES

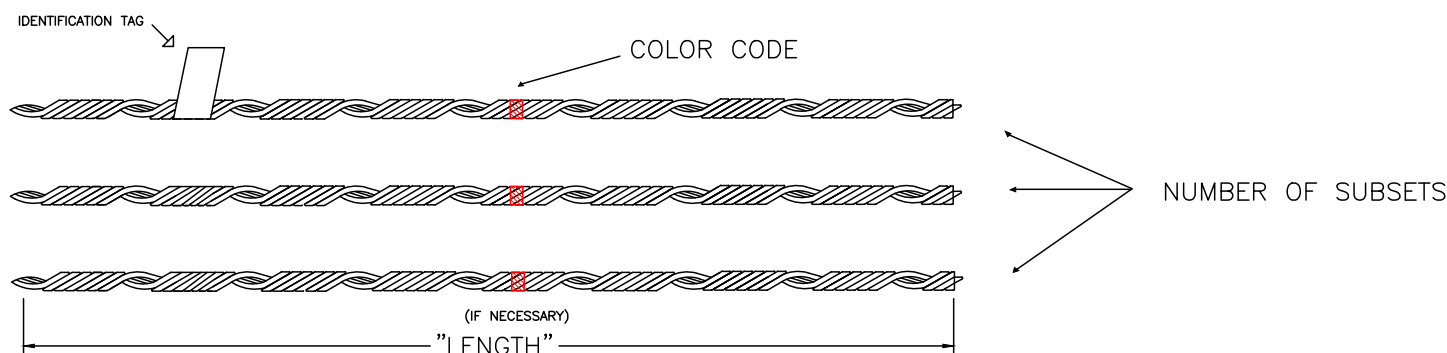
For repairing damaged or severed guy wire or messenger cable.

Do not use FWLS splices on overhead shield wires.

Fargo FWLS series formed wire are designed for use on all types of galvanized guy wire (EHS, High Strength, Common, Siemens-Martin, Utilities, and Bell System Strand).

FWLS will hold a minimum of 100% of the guy wire rated breaking strength (ultimate strength) when centered over the severed or point of damage.

Note: Consult factory for information on use if damaged area exceeds length of splice.
Left hand lay standard.



FWLS										
CATALOG NUMBER	NOMINAL SIZE	MAXIMUM RBS LB (KN)	NOMINAL LENGTH (L)		DIAMETER RANGE IN (MM)		NUMBER OF SUBSETS	COLOR CODE	PACKAGING PER BOX	
			IN	MM	MIN	MAX			UNITS	WEIGHT LBS. (KG)
FWLS2102	3/16" (3W & 7W)	3,990 (17.7)	27	685	0.174 (4.41)	0.203 (5.16)	2	Red	100	30 (13.6)
FWLS2103	7/32" (7W)	5,400 (24.0)	29	737	0.204 (5.18)	0.230 (5.84)	2	Green	100	36 (16.3)
FWLS2104	1/4" (3W & 7W)	6,650 (29.6)	35	889	0.231 (5.87)	0.259 (6.58)	2	Yellow	50	34 (15.4)
FWLS2105	9/32" (7W)	8,950 (39.8)	38	965	0.260 (6.60)	0.291 (7.39)	2	Blue	50	36 (16.3)
FWLS2106	5/16" (3W & 7W)	11,200 (49.8)	42	1067	0.292 (7.42)	0.336 (8.53)	2	Black	50	46 (20.8)
FWLS2107	3/8" (3W & 7W)	15,400 (68.5)	50	1270	0.337 (8.56)	0.394 (10.01)	3	Orange	25	38 (17.2)
FWLS2108	7/16" (7W)	20,800 (92.5)	56	1422	0.395 (10.03)	0.474 (12.04)	3	Green	25	58 (26.3)
FWLS2109	1/2" (7W & 19W)	26,900 (119.7)	63	1600	0.475 (12.07)	0.515 (13.08)	3	Blue	10	36 (16.3)
FWLS2110	9/16" (7W & 19W)	35,000 (155.7)	71	1803	0.516 (13.11)	0.570 (14.48)	3	Yellow	10	52 (23.5)

NOTES: All dimensions: inches (mm) unless otherwise noted.

Rated at full tension of guy strand RBS for EHS, HS, Siemens-Martin, Common, and Utility Grades.

Splice, Guy Wire

AUTOMATIC ALUMINUM GUY WIRE SPLICES

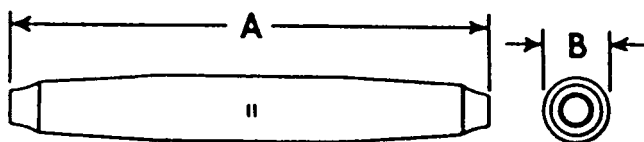
For splicing applications with overhead or support guy wires.

Fargo GLS500x series automatic splices are designed for use on High Strength (HS), Common (Com), Siemens-Martin (SM), Utilities (Util) and Bell System strand.

Fargo GLS504x series automatic splices are designed for use on all guy wire types listed above, plus Extra High Strength (EHS) and Alumoweld (AW).

All GLS automatic splices will hold a minimum of 90% of the guy wire rated breaking strength.

Material: Shell - High Strength Aluminum Alloy
Jaws - Plated Steel



AERIAL
INSTALLATION

GLS								
CATALOG NUMBER	PRIMARY STRAND APPLICATION	TO BE USED WITH:			RANGE (IN.)	RANGE (MM)	DIMENSIONS INCHES (MM)	
		EHS	AW / AWAC	HS, COM, S-M, UTIL, BELL			A	B
GLS5000	1/4" HS, Com, S-M, Util, Bell			•	0.240 - 0.253	6.11 - 6.44	6.4 (163)	0.9 (23)
GLS5001	5/16" HS, Com, S-M, Util, Bell			•	0.310 - 0.335	7.89 - 8.53	7.3 (185)	1.1 (28)
GLS5002	3/8" HS, Com, S-M, Util, Bell			•	0.360 - 0.405	9.16 - 10.31	8.1 (206)	1.3 (33)
GLS5039	3/16" EHS, AW	•	•	•	0.145 - 0.215	3.86 - 5.45	8.6 (219)	1.1 (28.6)
GLS5040	1/4" EHS 7#12 (6M) AW	•	•	•	0.215 - 0.270	5.46 - 6.86	8.3 (211)	1.13 (28)
GLS5041	5/16" EHS 7#10 (10M), 7#11 (8M) AW	•	•	•	0.270 - 0.315	6.86 - 8.00	8.6 (218)	1.22 (31)
GLS5042	3/8" EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC	•	•	•	0.325 - 0.392	8.26 - 9.96	10.0 (254)	1.48 (38)
GLS5044	1/2" EHS, 25M AW, #1-2/5, #1/0-3/4, #2/0-5/2 AWAC #2/0-4/3 AWAC	•	•	•	0.455 - 0.520	11.56 - 13.21	10.8 (274)	1.70 (43)

Splice, Guy Wire

ALUMINUM GLS REDUCING WIRE SPLICES

- For splicing applications with overhead or support wires.
- Fargo GLS508x series automatic splices are designed for use on High Strength (HS), Common (Com), Siemens-Martin (SM), Utilities (Util), and Bell System Strand (Bell).
- All GLS automatic splices will hold a minimum of 90% of the guy wire rated breaking strength.

Material: Shell - High Strength Aluminum Alloy
Jaws - Plated Steel



GLS Reducing

CATALOG NUMBER	SMALL END STRAND APPLICATION	LARGE END STRAND APPLICATION	TO BE USED WITH:			SMALL END RANGE IN. (MM)	LARGE END RANGE IN. (MM)
			EHS	AW / AWAC	HS, COM, S-M, UTIL, BELL		
GLS5086	3/16"HS, Com, S-M, Util, Bell	1/4"HS, Com, S-M, Util, Bell				0.145-0.215 (3.68-5.46)	0.215-0.270 (5.46-6.86)
GLS5087	1/4"EHS 7#12, (6M) AW	5/16"EHS 7#10, (10M), 7#11, (8M) AW				0.215-0.270 (5.46-6.86)	0.270-0.315 (6.86-8.00)
GLS5088	5/16"EHS 7#10, (10M), 7#11, (8M) AW	3/8"EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC				0.270-0.315 (6.86-8.00)	0.325-0.392 (8.26-9.96)
GLS5089	3/8"EHS 3#5, 7#8, 7#9, 12.5M, 14M, 16M AW #4-2/5, #2-3/4, #1-5/2 AWAC	7/16"EHS 7#7 (20M), 18M AW #2-2/5, #1-3/4, #1/0-5/2 AWAC				0.325-0.392 (8.26-9.96)	0.392-0.458 (9.6-11.63)

Staples

Used to secure ground wire and ground wire molding to wood poles.

AERIAL
INSTALLATION



Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	FINISH							
		ELECTRO ZINC Catalog Number		GALVANIZED Catalog Number		COPPER COATED Catalog Number		BRIGHTWIRE Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Barbed Square Shank Cut Point	1½ x ¾ x .131			C2050460 ⁽¹⁾ 1750/350 0.014					
	1½ x ¾ x .140					C2050464 ⁽¹⁾ 1500/300 0.017			
	2 x ¾ x .131			C2050461 1300/260 0.019					
	2 x ¾ x .165			C2050463 ⁽¹⁾ 800/160 0.032					
	3 x 1½ x .218			C2050462 ⁽¹⁾ 300/60 0.032					

(1) RUS listed.


Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	FINISH							
		ELECTRO ZINC Catalog Number		GALVANIZED Catalog Number		COPPER COATED Catalog Number		BRIGHTWIRE Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Cut Slash Point	1¼ x ¾ x .114					C2050245 6700/NA 0.007			
	1¾ x ½ x .162					C2050244 3100/NA 0.016			
	1½ x ¼ x .148	751134 ⁽³⁾ 3600/NA 0.014		C2050247 ⁽¹⁾⁽²⁾ 3600/NA 0.014					
	1½ x ¾ x .162					9167 ⁽¹⁾ 2900/NA 0.017			
	2 x ½ x .162					9169 2200/NA 0.023			

Sold by the Pound

(1) RUS listed. (2) ANSI standard, C-135.14.

(3) Add SP to catalog number for special package - 10 pound carton, minimum order quantity 10 cartons. Approx. ship weight of 100 pounds.

Staples (continued)

Staple Type	Dimensions Length x Inside Width x Wire Diameter Inches	FINISH							
		ELECTRO ZINC Catalog Number		GALVANIZED Catalog Number		COPPER COATED Catalog Number		BRIGHTWIRE Catalog Number	
		Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)	Quantity Per Carton/Inner Package	Approx Ship Wt Each (lbs)
Rolled Diamond Point 	1 x 1/4 x .114					C2050223 ⁽²⁾ 5000/500	0.005		
	1 x 5/16 x .120	7511 1000/100	0.005	C2050213 1000/100	0.005				
	1 1/4 x 1/4 x .114					C2050224 ⁽²⁾ 5000/500	0.006		
	1 1/2 x 5/16 x .144					C2050225 ⁽²⁾ 2500/500	0.012		
	1 1/2 x 3/8 x .148	C2050207 1000/100	0.014	C2050214 ⁽²⁾ 1000/100	0.014			C2050235 1000/100	0.104
	1 3/4 x 3/8 x .144					9153 ⁽²⁾ 2500/500	0.014		
	1 3/4 x 3/8 x .148	C2050208 1000/100	0.015	C2050215 ⁽²⁾ 1000/100	0.015				
	2 x 1/2 x .162	7512 ⁽²⁾ 1000/100	0.022	C2050216 ⁽¹⁾⁽²⁾ 1000/100	0.022	9154 1000/100	0.022	C2050237 1000/100	0.022
	2 x 5/8 x .162	C2050209 ⁽²⁾ 1000/100	0.023	C2050217 ⁽²⁾ 1000/100	0.023	C2050226 ⁽²⁾ 1000/100	0.023		
	2 x 5/8 x 3/16	C2050210 1000/100	0.032	C2050218 ⁽²⁾ 1000/100	0.032				
	2 x 1 1/16 x 3/16	7513 1000/100	0.031	C2050219 ⁽²⁾ 1000/100	0.031	C2050229 1000/100	0.031		
	2 1/4 x 25/32 x 3/16					C2050227 1000/100	0.034		
	2 1/2 x 1 1/16 x 3/16					C2050230 ⁽²⁾ 1000/100	0.040		
	3 x 1 x 1/4					C2050232 ⁽²⁾ 500/100	0.080		
	3 x 1 1/16 x 1/4	7522 ⁽²⁾ 500/100	0.080	C2050220 ⁽²⁾ 500/100	0.080	9161 ⁽¹⁾⁽²⁾ 500/100	0.080		
	3 x 1 1/2 x 1/4	C2050211 500/100	0.080	C2050221 ⁽²⁾ 500/100	0.080	C2050233 500/100	0.080	C2050242 500/100	0.080
	3 1/2 x 1 3/4 x 1/4	C2050212 250/100	0.095	C2050222 250/50	0.095				

(1) RUS listed. (2) ANSI standard, C-135.14.

Steps

POLE STEPS

Steps are made from hot-rolled, open-hearth steel. Hot-dip galvanized. Standard Drive Hook type has fetter drive thread and pilot point for easy starting.

Catalog Number	Type Head	Size Inches	Approx Ship Wt Each (lbs)
506125 ⁽¹⁾	Hook	5/8 x 10	0.92

(1) NEMA standard.



No. 506125

Detachable Type

Steps make a neat appearance and deter unauthorized pole climbing. Installed by placing plate over lag until plate cuts into pole. Nail driven into bottom hole gives extra rigidity. Step fits on lag head. Order lags and steps separately. Lag and plate assemblies are available for either wood pole or steel pole applications.

Note: T2050433 and T2050449 are not for composite pole installations.

Detachable Type		
Catalog Number	Description	Approx Ship Wt Each (lbs)
PS6235 ⁽¹⁾	Lag & Plate (for wood pole installation)	0.60
PS6236 ⁽¹⁾	Step	1.05
T2050433	Bolt & Plate (for steel pole installation)	0.64
T2050449	Bolt, Plate, Step (for steel pole installation)	1.70

(1) NEMA standard.



No. PS6235



No. PS6236

Washers

GALVANIZED STEEL WASHERS

Square Curved Washers

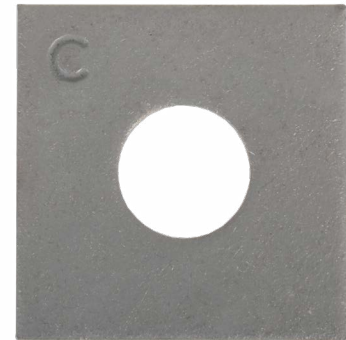
Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
680912	4 x 4 x 1/4	15/16	7/8	1.20
681012	2 1/4 x 2 1/4 x 3/16	1 1/16	5/8	0.31
PS6822	2 1/2 x 2 1/2 x 3/16	1 1/16	5/8	0.36
682212	3 x 3 x 1/4	1 3/16	3/4	0.66
6823	3 x 3 x 1/4	7/8	3/4	0.62
682312	3 x 3 x 1/4	1 1/16	5/8	0.62
6825	3 1/4 x 3 1/4 x 1/4	1 3/16	3/4	0.76
DF4W15	4 x 4 x 3/16	1 3/16	3/4	0.82
400285037	3 3/8 x 3 1/2 x 3/8	1 5/16	7/8	1.22
400285029	3 3/8 x 3 1/2 x 3/8	1 1/8	1	1.30



Square Curved

Square Washers

Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
6811	2 x 2 x 1/8	9/16	1/2	0.13
6812	2 x 2 x 1/8	1 1/16	5/8	0.12
6813	2 1/4 x 2 1/4 x 3/16	1 1/16	5/8	0.24
PSC2050546	3 x 3 x 1/4	1 1/16	5/8	0.60
6814 ⁽¹⁾	2 1/4 x 2 1/4 x 3/16	1 3/16	3/4	0.23
6816	3 x 3 x 3/16	1 3/16	3/4	0.51
6817 ⁽¹⁾	3 x 3 x 1/4	1 3/16	3/4	0.64
6818 ⁽¹⁾	4 x 4 x 3/16	1 3/16	3/4	0.87
681812	4 x 4 x 1/4	7/8	3/4	1.20
681912 ⁽¹⁾	4 x 4 x 1/2	1 3/16	3/4	2.36
PSC2050534	3 x 3 x 1/4	1 5/16	7/8	0.60
6819	4 x 4 x 1/4	1 5/16	7/8	1.18
PSC2050519	4 x 4 x 1/4	1 1/16	1	1.04
6820	4 x 4 x 1/2	1 1/8	1	2.28
400285714	4 x 4 x 1/2	1 3/16	1 1/8	2.28
400285722	6 x 6 x 1/2	1 7/16	1 3/8	4.18



Square

(1) RUS listed.

Washers *(continued)*

GALVANIZED STEEL WASHERS

Round Washers				
Catalog No	Dimensions Inches			Approx Ship Wt Each (lbs)
	Washer Size	Hole Diameter	Bolt Diameter	
PS6801	1 O.D. x 14 Ga.	7/16	3/8	0.016
PS6802	1 1/4 O.D. x 14 Ga.	9/16	3/8	0.028
PS6803 ⁽¹⁾	1 3/8 O.D. x 12 Ga.	9/16	1/2	0.045
400285169	1 3/8 O.D. x 12 Ga.	9/16	1/2	0.045
6805 ⁽¹⁾	1 3/4 O.D. x 10 Ga.	1 1/16	5/8	0.085
6806	2 O.D. x 9 Ga.	1 3/16	3/4	0.118
6808	2 1/2 O.D. x 8 Ga.	1 1/16	1	0.21

⁽¹⁾ RUS listed.



Round



Washers *(continued)*

GALVANIZED STEEL WASHERS

Spring Clip Washers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
3539	5/32 x 1	9/16	1/2	0.22
3540	1/4 x 1 3/4	1 1/16	5/8	0.93
3541	1/4 x 1 3/4	1 3/16	3/4	0.91
C2050436	1/4 x 1 3/4	1 5/16	7/8	0.89
C2050438	1/4 x 1 3/4	1 1/16	1	0.87



Spring Clip

Spring Lock Washers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
DF7W1	0.094 x 0.141	7/16	3/8	0.010
4035	0.125 x 0.171	9/16	1/2	0.015
4036	0.156 x 0.203	1 1/16	5/8	0.024
400285102 ⁽¹⁾	0.156 x 0.203	1 1/16	5/8	0.024
4037	0.188 x 0.234	1 3/16	3/4	0.048
PSC2050496	0.219 x 0.266	1 5/16	7/8	0.066
PSC2050497	0.250 x 0.297	1 1/16	1	0.084



Spring Lock

(1) Packaged 300 per carton.

Double Coil Spring Lockwashers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
C2050185	5/32 x 1	9/16	1/2	0.040
C2050186	3/16 x 1 3/16	1 1/16	5/8	0.066
C2050187	7/32 x 1 3/8	1 3/16	3/4	0.104
C2050188	7/64 x 3/4	7/16	3/8	0.015



Double Coil Spring

Heavy Duty Double Coil Spring Lockwashers

Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Stock	Hole Size	Bolt Size	
CMW38	0.156 x 0.196	0.40	3/8	0.030
CMW12	0.156 x 0.243	0.53	1/2	0.050
CMW58	0.234 x 0.302	0.65	5/8	0.120
CMW34	0.234 x 0.302	0.78	3/4	0.140

Washers (continued)

CAST GALVANIZED STEEL WASHERS

Cast washers provide excellent strength characteristics. Reinforcing ribs helps prevent washer from crushing.

Curved Square				
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
GCW1	2¼ x 2¼	⅝	¼	0.20
GCW31	3 x 3	⅝	⅜	0.45
GCW31A	3 x 3	¾	⅜	0.45
GCW41	4 x 4	¾	½	1.00
GCW41A	4 x 4	7/8	17/32	1.00



Curved Square

Curved Rectangular				
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
CRW3	2¼ x 3½	¾	⅜	0.45
CRW4A	3 x 4	7/8	½	0.93
CRW4B	3 x 4	1	½	0.93



Curved Rectangular

Round Flat				
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Diameter	Max. Bolt Diameter	Thickness At Boss	
GWR3	3	¾	7/16	0.44
GWR4	4	7/8	½	0.87
GWR4A	4	1	½	0.87



Round Flat

Square Flat				
Catalog Number	Dimensions Inches			Approx Ship Wt Each (lbs)
	Size	Max. Bolt Diameter	Thickness At Boss	
BB214	2¼ x 2¼	⅝	9/32	0.20
BB214A	2¼ x 2¼	¾	9/32	0.20



Square Flat

Drop Line Hardware

With pole line hardware manufacturing experience going back to 1907, Hubbell's growing line of drop line hardware provides the same quality and reliability all the way to the customer's premises. Products include those needed for twisted pair, coax, or fiber from the pole to the house or business.

Drop Attachments

SIDING CLIPS

Simplifies field installation for RG6 and RG59 coaxial cable. Wedges in-between siding. No drilling/screwing required. Made from plastic. Standard package size of 100.

Catalog Number	Color	Orientation
PSC2080442	Clear	Horizontal
PSC2080443	Black	Horizontal
PSC2080444	Clear	Vertical
PSC2080445	Black	Vertical

Horizontal House Clip



Vertical House Clip

DRIVE RING

Use to secure or temporarily support drop cable on the pole. Meets Bellcore CA06835. Minimum order

Catalog Number	Size	Dimensions Inches (in)			Minimum Order Quantity	Approx Ship Wt Each (lbs)
		A	B	C		
PSC2170074	1/2	1 3/8	2 1/6	3/4	500	0.02
PSC2170075	5/8	1 7/16	2 1/4	1 1/8	500	0.03
PSC2170076	5/8 L	1 15/16	2 3/4	1 1/8	500	0.03
PSC2170077	7/8	1 1/2	2 5/8	2 1/6	250	0.06
PSC2170078	7/8 L	2	3 1/6	2 1/6	250	0.07
PSC2170079	1 1/4	1 5/8	2 15/16	2 3/4	250	0.10
PSC2170080	1 1/4 L	2 1/8	3 7/16	2 3/4	250	0.10

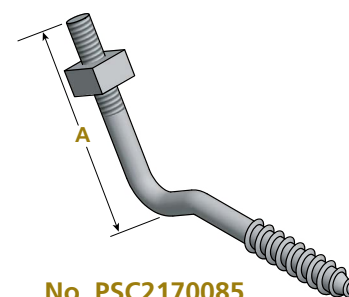


No. PSC2170074

ANGLE SCREWS

Hot-dip galvanized angle screws

Catalog Number	Size	Dimensions Inches (in)				Minimum Order Quantity	Approx Ship Wt Each (lbs)
		Machine Thread	Wood Screw Thread	Length A (in)	Machine Screw Thread Length (in)		
PSC2170085	5/16	5/16 - 18	#20	2 1/4	1 1/8	10	0.12
PSC2170086	3/8	3/8 - 16	#24	3 1/4	1 5/8	10	0.16



No. PSC2170085

Drop Attachments

HOUSE HOOKS

Loop drop wire clamp bail over 'P' section of house hook.

Catalog Number	Dimensions (in)	Wrenchable?	Minimum Order Quantity	Approx Ship Wt Each (lbs)
PSC2170095	3 ¾ x 1 ½	No	200	0.07
PSC2170096	4 ½ x 1 ¾	Yes	100	0.07
PSC2170097	6 ½ x 1 ¾	No	100	0.07
PSC2170129	4 ½ x 1 ½	Yes	200	0.09



No. PSC2170095

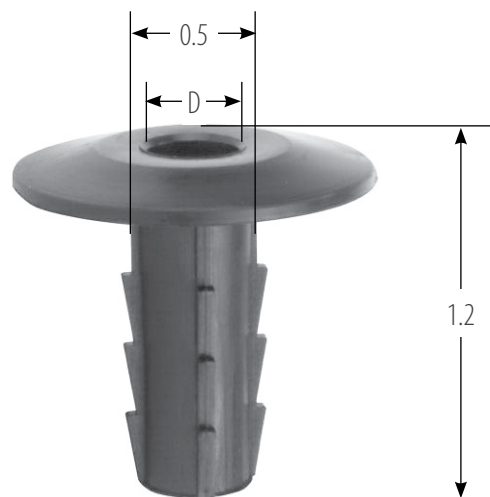


No. PSC2170096

BUSHINGS

These single feed-through bushings seal wall openings and protect RG6 and RG6 Quad Cables from harm and abrasion damage.

Catalog Number	Dimensions (in)	Feed through diameter D (in)	Color
PSC2080429	1.2 x 0.5	0.310	Natural
PSC2080430	1.2 x 0.5	0.310	Clear
PSC2080431	1.2 x 0.5	0.310	Beige
PSC2080432	1.2 x 0.5	0.310	Black
PSC2080433	1.2 x 0.5	0.310	White
PSC2080434	1.2 x 0.5	0.265	Clear
PSC2080435	1.2 x 0.5	0.265	Beige
PSC2080436	1.2 x 0.5	0.265	Black
PSC2080437	1.2 x 0.5	0.265	White
PSC2080446	1.2 x 0.5	0.210	Clear
PSC2080447	1.2 x 0.5	0.210	Beige
PSC2080448	1.2 x 0.5	0.210	Black
PSC2080449	1.2 x 0.5	0.210	White



No. PSC2080432

Clamps

1-2 PAIR AND 6 PAIR DROPWIRE CLAMPS

Attaches to hooks and span clamps to secure ends (pole, building or mid-span) of 1-2 & 6 pair communication service drops

- 1-2 pair meets the requirements of Telcordia specifications GR-3174
- Clamp Strength Rating:
 - 1-2 pair clamps - 555 lbs.
 - 6 pair clamps - 800 lbs.

Drop clamps will exceed the rated tensile strength of the applicable cable

Features

- Available in either stainless steel or aluminum
- 1-2 pair supplied with serrated shims
- 6 pair supplied with dimpled shims

Material:

- Stainless steel clamps - 304 stainless steel
- Aluminum clamps - 5052-H32 aluminum
- Clamp bail wire (aluminum and stainless clamps) - 430 stainless



1-2 Pair Drop Wire Clamp



6 Pair Drop Wire Clamp

Catalog Number	Drop Cable	Material	Shim Style	Approx Ship Wt Each (lbs)
C2PRAS	1-2 Pair	Aluminum	Serrated	.08
C2PRSS		Stainless		.11
C6PRAD	6 Pair	Aluminum	Dimpled	.14
C6PRSD		Stainless		.18

UNIVERSAL CATV CLAMP

Attaches to hooks and span clamps to secure ends (pole, building or mid-span) of CATV messengered service drops.

Material:

- Clamp - 5052-H32 aluminum
- Clamp bail wire - 430 stainless

Catalog No.
CMDCA
CATV Service
Drop Clamp



Catalog Number	Drop Cable	Approx Ship Wt Each (lbs)
CMDCA	Messengered COAX	0.05

FLAT FIBER DROP CLAMP

Drop wire clamp for attaching flat fiber type communications cable to hooks, or span clamps that are installed on buildings, poles or at mid-span.

Material:

- Clamp - 304 stainless
- Wire bale - 430 stainless

No. FFD12SS



Catalog Number	Drop Cable	Approx Ship Wt Each (lbs)
FFD12SS	Flat Fiber Cable	0.11

Clamps, Span

MULTI-DROP SPAN CLAMPS

When used in conjunction with messengered drop cable, the messenger wire can be installed directly to the multidrop span clamp without a drop wire clamp.

Features

- Attach multiple drop wire clamps at one location
- Bolt staked to prevent loss of nut
- Accepts 1/4-inch strand
- Hubbell catalog no. PSC2080475



No. PSC2080475

SPAN CLAMPS

For attaching overhead service wire to strand.

Features

- Works on 6M through 25M strand.
- Short, shaped teeth give extraordinary gripping power to clamp without touching the web.
- Works well on both self-support cable and bare strand.
- Especially effective in attaching to duct-on-strand or aerialinner duct.
- Meets Spec CA08391 for function and mechanical strength.



EM 8010 on
Strand

Ordering information

EM 8010 Span Clamp with Teeth.

Standard packaging: 5/sm bx, 100/lg bx, 41 lb/lg bx. No minimum order.

EM 8011 "The Gripper" finger version.

Standard packaging: 5/sm bx, 100/lg bx, 41 lb/lg bx. No minimum order.



EM 8011

MID-SPAN CLAMPS

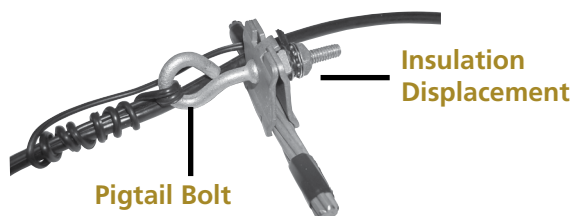
For attaching overhead service wire to strand, and bonding messenger to strand.

Features

- Pigtail bolt reduces chance of messenger wire slipping out of bolt.
- Three stainless steel washers with insulation-penetrating teeth contact messenger through jacket. This reduces corrosion and installation time.
- Works on .109 through 25M strand.
- Short, shaped teeth give extraordinary gripping power.

Ordering information

EM 8012-1PIDC



Pigtail Bolt

Insulation
Displacement

For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

Clamps, Span

MID-SPAN CLAMPS

Provides drop wire clamp attachment at the mid-span.

Material:

- Clamp - Galvanized Steel
- Clamp bail wire - Stainless Steel

Catalog Number	Letter Designation	Bolt/Pigtail Diameter (in)	Approx Ship Wt Each (lbs)
CQSC	Q Span	.025	0.17
CCSC	C Span	0.38	0.25
CESC	E Span	0.38	0.43
COSC	O Span	0.38	0.25



Q Span Clamp



C Span Clamp



E Span Clamp



O Span Clamp

Clamps, Span

SPAN CLAMP WITH INTERNAL TEETH

Applications

- Attaching overhead service wire to strand, and bonding messenger to strand.

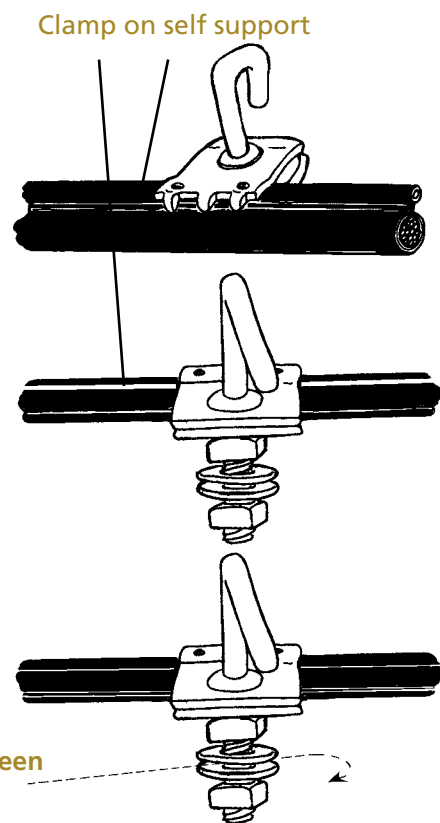
Features

- Works on 6M through 25M strand.
- Short, shaped teeth give extraordinary gripping power to clamp without touching the web.
- Especially effective in attaching to duct-on-strand or aerial inner duct.
- Meets Spec CA08391 for function and mechanical strength.
- Internal insulation-penetrating teeth contact strand through jacket (no stripping).

Ordering information

EM 8012 Span clamp

Standard packaging: 5/sm bx, 100/lg bx, 43 lb/lg bx. No minimum order.



AERIAL
INSTALLATION

BONDING CLIP FOR INTEGRATED MESSENGER COAX CABLE

Description

A set of teeth in clip form, made of tinned copper alloy.

Applications

- Can be used under strand applied hardware to provide bonding contact through IM coax insulation.

Features

- Teeth long enough and strong enough to make reliable contact.
- A multiple of teeth to pass the high current test.
- Tinned to provide compatibility.
- Collapsible enough to be pre-applied by hand.
- Prevents having to strip insulation.
- Longer than most hardware so the clip can be seen from the ground, assuring bonding is done.

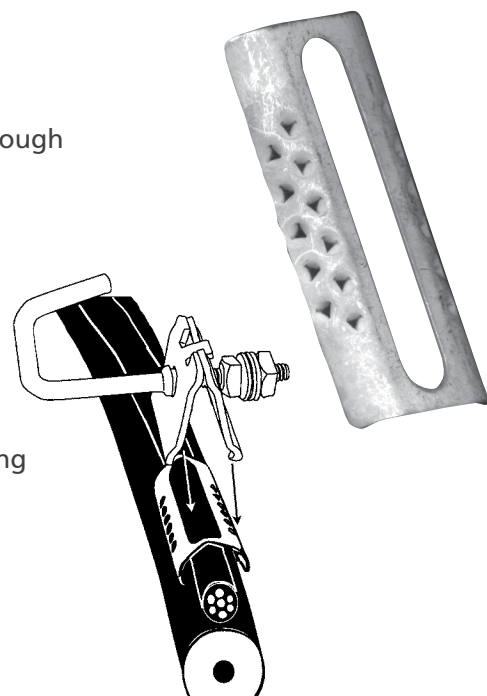
Ordering information

EM 8801

Bonding Clip for Integrated Messenger Coax Cable

Standard packaging: 2000/bx, 30 lb/bx.

No minimum order.



For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com

Clamps, Span

MID-SPAN CLAMP INSULATOR

Description

The Mid-Span Clamp Insulator provides extra insulation between the support strand and aerial drop wire. Made from low density polyethylene, it helps prevent lightning burn through of the drop wire jacket, which causes nuisance ground-outs.

Features

- Simple, economical design is available as a loose piece to install on existing hardware, or it can be ordered on new mid span clamps.
- Shaped like a cam, it can be installed on pigtail bolt, located, and then turned to lock in the drop wire bail.

Applications

For use in lightning-prone areas. It is also economical enough to use on every span clamp to help prevent trouble.

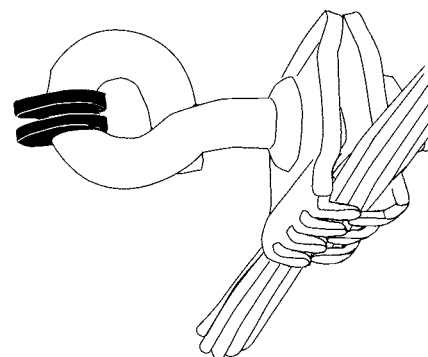
Ordering information

EM PG02 Mid-span clamp insulator

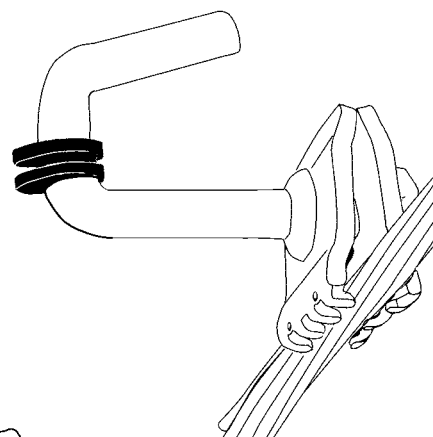
EM 8010PG Span clamp with teeth and insulator

EM 8011PG Span clamp with fingers and insulator

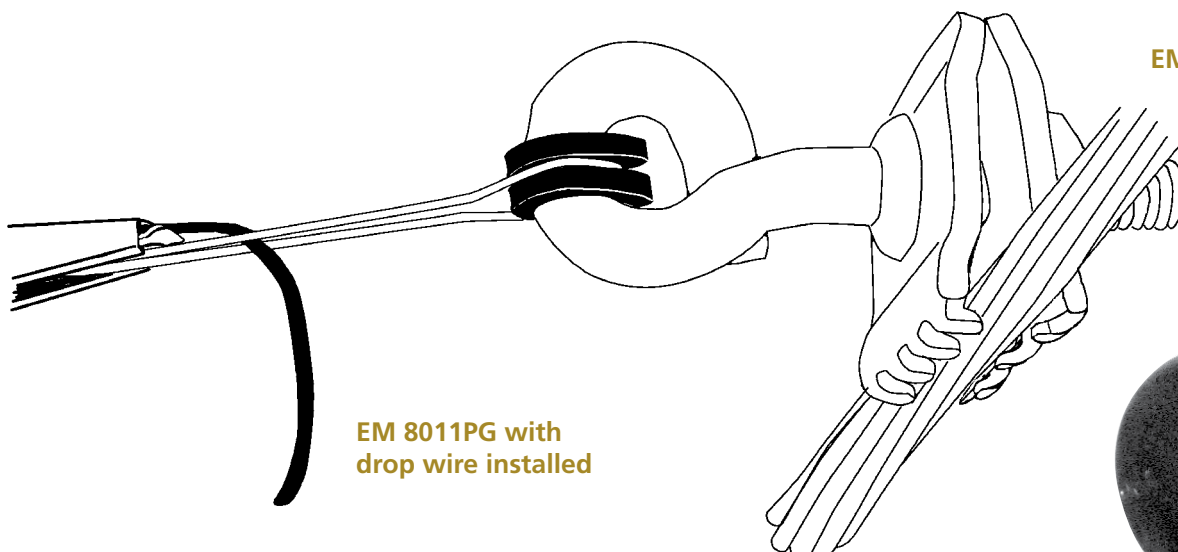
EM 8012PG Span clamp with internal teeth, "L"-shaped bolt, and insulator



EM 8010PG



EM 8012PG



EM 8011PG with
drop wire installed



Hook

RAM'S HORN HOOK

Ram's Horn Hook attaches at the home or building with 1/4" hardware (not provided). Loop drop wire clamp bail over ram's horn hook.

Ordering information
Hubbell Catalog No. CRHH



No. CRHH

INSULATED P-HOOK

House attachment for drop wire clamps. Extra long shank for aluminum siding. Porcelain knob for high strength as well as insulating qualities.

Ordering information
EM 8016 Insulated P-Hook Standard packaging: 100/bx, 12 lb/bx. No minimum order.
EM 8016-KNOB Just the porcelain knob.



INSULATED P-HOOK

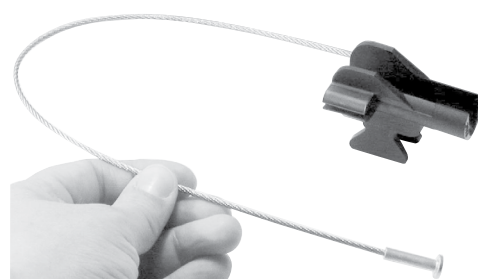
Applications

Connecting messengered coax drop wire to house hooks, "P" clamps, ram's horns.

Features

- Glass-filled nylon for outstanding strength.
- Non metallic body insulates against shorts.
- Detachable bail can be threaded through a loop.
- Flexible bail can be looped around for extra stability.
- Rounded geometry prevents damage to coax or messenger.

Ordering information: EM RD011 Coax Drop Clamp



For Electric Motion Company (EMC) part numbers starting with "EM" please contact EMC customer service at 860-379-8515 or cs110@hubbell.com



ADSS Hardware

In many cases, ADSS aerial fiber installation is faster and more cost effective than lashing, and allows communications cables to be placed in the power zone on utility poles.

Hubbell Power Systems' line of ADSS support hardware for short span distribution applications makes the job even faster, reducing installation costs while ensuring system integrity, even in heavy ice and wind loading areas.

Lite Tension ADSS Formed Wire Deadends

The ADSS Formed Wire Deadend is designed to securely but safely terminate all ADSS (All Dielectric Self-Support) aerial fiber optic cables with spans up to 300 ft.

Material

- Galvanized Steel

Benefits

- Economical single component design
- Shorter lengths result in shorter installation time

Specifications

- Deadending of 0.394" to 0.748" ADSS cables
- Spans up to 300 ft.
- For standard ADSS jackets

Tension

- Lite tensions, approximately:
600# (2.7 kN) maximum initial (stringing/nominal axial/long-term) tension
800# (3.5 kN) maximum loaded (working/loaded axial/short-term) tension



PART NUMBER	CABLE DIAMETER RANGE				OVERALL LENGTH		COLOR
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	IN.	MM.	
AFWDEL100	0.394	0.433	10	11	18	450	GREEN
AFWDEL101	0.453	0.492	11.5	12.5	22	550	RED
AFWDEL102	0.512	0.551	13	14.0	23	590	BLUE
AFWDEL103	0.571	0.610	14.5	15.5	25	630	BLACK
AFWDEL104	0.630	0.685	16	17.4	27	680	BROWN
AFWDEL105	0.689	0.748	17.5	19	28	720	ORANGE

* To include accessories in the same carton, add the suffix CEL to the part number. For instance AFWDEL100CEL includes deadend AFWDEL100, TC1 thimble clevis, 6502 eyenut, and L14 extension link.

Limited Tension ADSS Formed Wire Deadends

The ADSS Formed Wire Deadend with armor rods is designed to securely but safely terminate all ADSS (All Dielectric Self-Support) aerial fiber optic cables with spans up to 500 feet.

Material

- Galvanized Steel

Benefits

- Armored rods included for increased strength
- Suitable for temperatures and conditions defined by cable manufacturers

Specifications

- Deadending of 0.413" to 0.654" ADSS cables
- Spans up to 500 ft.
- For standard ADSS jackets

Tension

- Low tensions, approximately:
1000# (4.4 kN) maximum initial (stringing/nominal axial/long-term) tension
2500# (11.1 kN) maximum loaded (working/loaded axial/short-term) tension



PART NUMBER	CABLE DIAMETER RANGE				OVERALL LENGTH				COLOR
					ARMOR RODS		DEADENDS		
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	IN.	MM.	IN.	MM.	
AFWDEL107	0.413	0.445	10.5	11.3	40	1015	32	820	WHITE
AFWDEL108	0.453	0.496	11.5	12.6	40	1015	32	820	YELLOW
AFWDEL110	0.492	0.535	12.5	13.6	40	1015	32	820	BLACK
AFWDEL111	0.531	0.571	13.5	14.5	40	1015	32	820	BLUE
AFWDEL112	0.559	0.598	14.2	15.2	40	1015	32	820	RED
AFWDEL113	0.602	0.654	15.3	16.6	40	1015	32	820	BROWN

* To include accessories in the same carton, add the suffix CEL to the part number. For instance AFWDEL107CEL includes deadend AFWDEL107, TC1 thimble clevis, 6502 eyenut, and L14 extension link.

Medium Tension ADSS Formed Wire Deadends

The ADSS Formed Wire Deadend with armor rods is designed to securely but safely deadend all ADSS (All Dielectric Self Support) aerial fiber optic cables with spans up to 1100 ft.

Material

- Galvanized Steel

Benefits

- Armor rods included for increased strength
- Suitable for temperatures and conditions defined by cable manufacturers

Specifications

- Deadending of 0.638" to 0.850" ADSS cables
- Spans up to 1100 ft.
- For standard ADSS jackets

Tension

- Limited to Moderate tensions, approximately:
1000# - 2000# (4.4 kN - 8.9 kN) maximum initial tension
2500# - 4000# (11.1 kN - 17.8 kN) maximum loaded tension



PART NUMBER	CABLE CAPACITY		OVERALL LENGTH				COLOR
			ARMOR RODS		DEADENDS		
	IN.	MM.*	IN.	MM.	IN.	MM.	
AFWDEL114	0.638	16.2	91	2300	56	1420	GREEN
AFWDEL115	0.661	16.8	60	1525	43	1100	WHITE
AFWDEL116	0.713	18.1	91	2300	56	1420	BLUE
AFWDEL117	0.724	18.4	60	1525	43	1100	YELLOW
AFWDEL120	0.850	21.6	60	1525	43	1100	BLACK

* +/- 0.5 mm

* To include accessories in the same carton, add the suffix CEL to the part number. For instance AFWDEL114CEL includes deadend AFWDEL114, TC1 thimble clevis, 6502 eyenut, and L14 extension link.

Lite Tension ADSS Formed Wire Helical Suspension

The ADSS Formed Wire Suspension is designed for use on all ADSS (All Dielectric Self-Support) aerial fiber optic cables with spans up to 295 ft. The ADSS formed wire suspension requires using a J-hook (Part # PSC2080237) through bolt for best installation.

Material

- Galvanized Steel

Specifications

- Suspending of 0.394" to 0.768" ADSS cables
- Spans up to 295 ft
- For standard ADSS jackets
- Accepts standard J-hook
- Round 50mm (1.97") thimble included



PART NUMBER	CABLE DIAMETER RANGE				OVERALL LENGTH				COLOR
					ARMOR RODS		SUSPENSION		
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	IN.	MM.	IN.	MM.	
AFWSUS100	0.394	0.453	10	11.5	17	440	34	870	GREEN
AFWSUS101	0.453	0.496	11.5	12.6	19	480	37	950	RED
AFWSUS102	0.512	0.551	13	14	19	480	37	950	BLUE
AFWSUS103	0.571	0.630	14.5	16.0	21	510	40	1010	BLACK
AFWSUS104	0.630	0.689	16	17.5	21	530	41	1050	BROWN
AFWSUS105	0.689	0.768	17.5	19.5	21	530	41	1050	ORANGE

ADSS Wedge Deadends

The Hubbell ADSS Wedge Style Deadend is designed for fast, easy, and reliable installation of ADSS (All Dielectric Self-Support) aerial fiber optic cable. The deadends are designed with an open, conical body containing a pair of sliding wedges. The wedges are engineered to mechanically couple to the cable without causing damage to the sheath or fibers, providing a secure grip without fear of signal loss.

Material

- Body: UV Resistant Thermoplastic
- Bail: Stainless Steel

Benefits

- Light and compact
- Easy, quick, and safe deadending
- Installation takes seconds with no special tools
- The flexible bail provides an extra protection to the cable against Aeolian vibrations
- Safe for installation near space potentials up to 11kV

Specifications

- Deadending of 0.236" to 0.787" ADSS cables
- Spans up to 325 ft.
- All plastic parts are UV resistant and tested in conditions equivalent to minimum of 25 years in service
- Accepts standard pole line fittings
- Recommended for double jacket ADSS cables. For single jacket cables, contact the manufacturer for recommendations.



PART NUMBER	CABLE DIAMETER RANGE				ULTIMATE BODY STRENGTH (LBF)
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	
WEGADSS100	0.236	0.315	6	8	750
WEGADSS101	0.315	0.394	8	10	750
WEGADSS102	0.394	0.472	10	12	1650
WEGADSS103	0.472	0.551	12	14	1650
WEGADSS104	0.551	0.630	14	16	1650
WEGADSS105	0.630	0.709	16	18	1650
WEGADSS106	0.709	0.787	18	20	1650

ADSS Suspension Clamps

The Hubbell ADSS suspension clamp is a heavy duty, versatile, and reliable solution for securely suspending ADSS (All Dielectric Self-Support) aerial fiber optic cable. The versatility of the clamp allows the installer to fix the clamp to the pole using either a through bolt or band. If a loose tangent is required, the clamp can be suspended using a standard J-hook (Part # PSC2080237). Accepting a range of sizes and multiple installation methods, the Hubbell ADSS suspension clamp is sure to meet your tangent needs.

Material

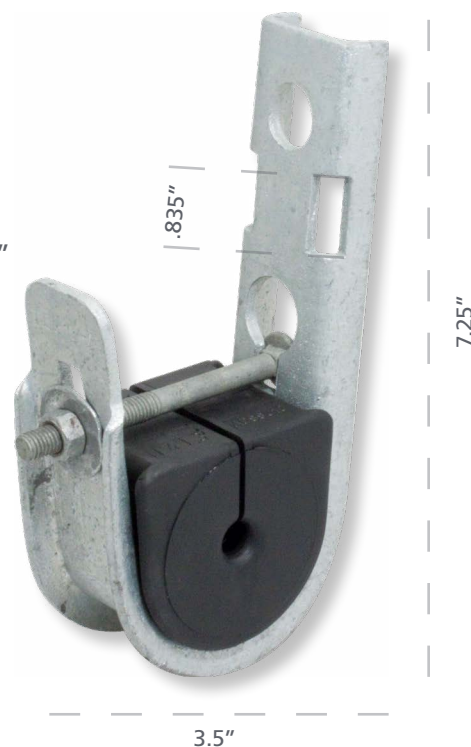
- Body: Galvanized Steel
- Insert: Neoprene Sleeve

Benefits

- Two sizes to cover the full range of ADSS cables from 0.394" to 0.787"
- Installation in just a few seconds with standard tools
- Versatility in installation methods

Specifications

- Tangent suspension for spans up to 600 ft.
- Less than 20° angle on cable routes between spans (For angles greater than 20°, double deadend or false deadend)



PART NUMBER	CABLE DIAMETER RANGE				ULTIMATE BODY STRENGTH (LBS.)
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	
ASCF102	0.394	0.591	10	15	3000
ASCF114	0.591	0.787	15	20	3000

ADSS Hanging Suspension Clamps

The Hubbell ADSS Dielectric Suspension Clamp is a great choice when installing ADSS (All Dielectric Self-Support) aerial fiber optic cable near the energized zone on a utility pole. Installed as a float mount, the clamp is best used on a closed eye nut (Part #'s 6500, 6501, 6502, 6503).

Material

- Body: UV Resistant Thermoplastic
- Insert: Neoprene Sleeve

Benefits

- Lightweight, compact, and cost effective design
- Dielectric body
- Installation in seconds
- Suspension bails provide additional protection against Aeolian vibration

Specifications

- Tangent suspension for spans up to 325 ft
- Less than 20° angle on cable routes between spans
(For angles greater than 20°, double deadend or false deadend)



PART NUMBER	CABLE DIAMETER RANGE				ULTIMATE BODY STRENGTH (LBF)
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	
AHSC800	0.315	0.472	8	12	450
AHSC1200	0.472	0.630	12	16	450

RPX® Suspension Clamp

The Hubbell RPX suspension clamp is designed specifically for efficient aerial installation of Corning RPX cable in middle pole installations.

Material

- Aluminum

Benefits

- Two-step installation for quick assembly
- Profile of clamp designed to handle all sizes from 48f to 144f
- Utilizes deviation angles of up to 20 degrees on both sides



Catalog Number	Size Range	Deviation Angle	Max. Span Length		Span Differential		Tension Differential		Initial Sag	Quantity
			FT	M	FT	M	LBF	N	%	#
HUBRPXSUS	48f-144f	up to 20°	262	80	98	30	150	667	1-3	10

For cable installation instructions, contact Corning Cable Systems.
Span differential is the difference in span length on each side of the clamp.
Tension differential is also known as unbalanced load.

Recommended pole attachment hardware: PSC2080237 J-Hook.

J-HOOK BOLT FOR RPX AND ADSS SUSPENSIONS

Designed especially for the suspension clamp with easy installation by captivating it onto the hook. The J-Hook offsets so that the suspension clamp cannot slide off if flipped upside-down in high winds. Includes 2" square washer and square nut for 5/8" thread.

Recommended pole attachment hardware:
Hubbell Catalog No. PSC2080237



Communication Pole Bracket

The Hubbell Communications Pole Bracket (CPB) is designed to be a high strength, universal fitting for use on all wooden, metal, or concrete poles using a bolt or steel bands.

Material

- Aluminum

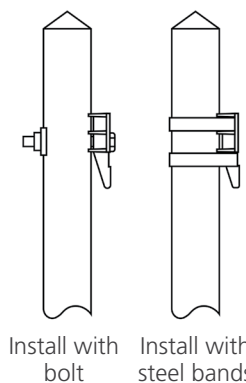
Benefits

- Provides three attachment points to cover a wide array of deadending applications - single, double and triple deadending options available on a single bracket

Specifications

- Through hole (.67" diameter) for bolted installation
- Incorporates two defined areas for 3/4" banding installation
- For use in telecom applications only

Hubbell Catalog Number: CPB



Spiral Vibration Dampers

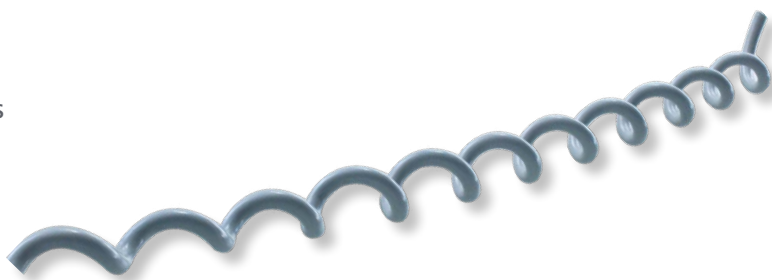
The ADSS spiral vibration damper reduces Aeolian vibration. Aeolian vibration is a high frequency, low amplitude vibration caused by wind passing across the fiber cable. This vibration can cause support hardware to breakdown and fail over time. The spiral vibration dampers are made of PVC and are very easy to install.

Material

- PVC

Benefits

- Reduces Aeolian and galloping vibrations
- Easy installation
- Dielectric material



PART NUMBER	CABLE DIAMETER RANGE				LENGTH (IN.)
	MIN (IN)	MAX (IN)	MIN (MM.)	MAX (MM.)	
SVD103	0.252	0.327	6.4	8.3	49
SVD104	0.327	0.461	8.3	11.7	53
SVD105	0.461	0.563	11.7	14.3	53
SVD106	0.563	0.760	14.3	19.3	65

A close-up photograph of a grey metal OptiLoop slack storage device. The device consists of a large circular ring and a horizontal crossbar. A cable is threaded through the center of the ring and secured by a locking mechanism on the crossbar. The background is a blurred outdoor scene with green foliage.

OPTI-LOOP™ Storage Systems

Cable slack in aerial networks is critical for expansion and repairs. Hubbell's OptiLoop aerial slack storage products are ideal for storing slack on the span. Available in various sizes and materials, OptiLoop slack storage systems can be used on lashed aerial, ADSS, and drop cables.

They provide a convenient, economically priced and industry-approved method of storing extra length of fiber optic cable.

Aluminum Fiber Optic Storage System

The aluminum Opti-Loop™ FOS for strand and messenger mounted cable is available in a variety of sizes. With more than one million units in service, Opti-Loop fiber storage systems lead the industry in quality and durability.

DESIGN FEATURES AND BENEFITS

- All aluminum construction with continuous welds at crossbars and ends.
- Each pair is individually boxed and includes stainless steel mounting bolts, nuts and washers.
- Fits all fiber cable up to 1.50" OD.
- Powder coat finish.
- Tie eyelets designed to accommodate both stainless steel and tie wrap securing methods.
- Radius ends to ensure no sharp corners.
- Outward facing channel and minimal surface area minimizes stress and ice loading.



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOS10TMK	10.2	23	11.4
FOS1TMK	12.2	26	13.4
FOS2TMK*	12.2	26	13.4
FOS3TMK	16.2	31	17.7
FOS3DTMK*	16.2	31	17.7
FOS4TMK	18.2	33	19.7
FOS5TMK*	18.2	33	19.8
FOS6TMK	20.2	34	21.4
FOS24TMK	24.0	38	25.4
FOS30TMK	30.0	44	31.4

*Indicates multi-wrap unit

Plastic Fiber Optic Storage System

The plastic Opti-Loop™ FOS for strand and messenger mounted cable is available in a variety of sizes. They provide a convenient, economically priced and industry approved method of storing extra length of fiber optic cable.

DESIGN FEATURES AND BENEFITS

- Utilizes self-aligning tap brackets.
- Requires only one tool for installation.
- No "fishing" tie wraps through holes or slots.
- Can be stacked if necessary.
- Contains UV inhibitor.
- Cut away channel creates a smoother transition to messenger.
- Minimal surface area minimizes stress and ice loading.



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOSP17TMK	17	26	18.9
FOSP12TMK	12	18	13.1

ADSS Direct Attach Fiber Optic Storage System

The Opti-Loop™ ADSS Direct Attach unit uses the patented bowtie double deadend process for storing ADSS fiber. This system provides maximum protection for fiber cable and contains no conductive properties.

DESIGN FEATURES AND BENEFITS

- Each pair is individually boxed and includes ADSS Direct Attach mounting brackets and an all dielectric pole block.
- No "fishing" tie wraps through holes or slots.
- Cut away channel creates a smoother transition to messenger.
- Contains UV inhibitor.



Ordering Information			
Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOSDA17ADSS	17	26	18.9
FOSDA12ADSS	12	18	13.1



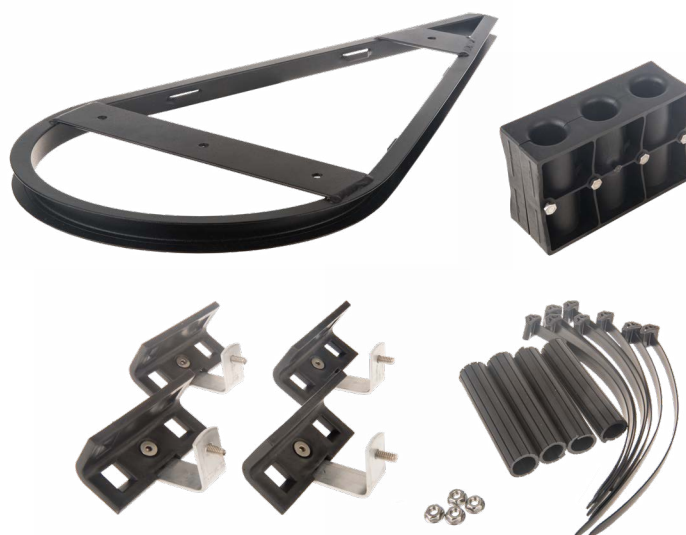
OptiLoop™ FOS Aluminum ADSS Storage System

The aluminum Opti-Loop™ FOS for All Dielectric Self Support (ADSS) cable is available in 3 sizes. With more than one million units in service, Opti-Loop fiber storage systems lead the industry in quality and durability.

DESIGN FEATURES AND BENEFITS

- All aluminum construction with continuous welds at crossbars and ends
- Each pair is individually boxed and includes ADSS Direct Attach mounting brackets and an all dielectric pole block
- Fits all fiber cable up to 1.50" OD
- Powder coat finish
- Tie eyelets designed to accommodate both stainless steel and tie wrap securing methods
- Radius ends to ensure no sharp corners
- Outward facing channel and minimal surface area minimizes stress and ice loading

**Hubbell Power Systems does not recommend using the aluminum ADSS Storage System in the power zone of the pole. It is only recommended for use in the communications zone of the pole. For All Dielectric plastic units please order the FOSDA version.*



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
FOS20ADSS	20.2	34.0	21.4
FOS24ADSS	24.0	38.0	25.4
FOS30ADSS	30.0	44.0	31.4

Fiber Cable Storage Wheel

The Hubbell® Opti-Loop™ Fiber Cable Storage Wheel provides another convenient option for storing fiber optic cable. This newest member of the Opti-Loop™ family brings versatility, security, and mobility by offering multiple safe mounting options aerially or on a pole or wall. Designed with the highest of standards and expectations that are associated with the Hubbell® and Opti-Loop™ names, the Cable Wheel delivers an economic solution for your fiber cable storage needs.

DESIGN FEATURES AND BENEFITS

- Can be mounted aerially, on a pole, or to a wall
- Suitable for all types of fiber optic cable
- Protects cable while preventing pinching by utilizing exclusive tie wrap notches
- Features a bracket "safety groove" for greater stability after installation

SPECIFICATIONS

- Convenient slots for banding
-Accepts standard 20 x 0.7mm banding
- Can be used on lashed aerial fiber or All Dielectric Self Support (ADSS) fiber
- Rugged, non-conductive material with UV protection



Ordering Information

Catalog Number	Diameter (Inches)	Description
FOSPCW14	14	One 14" Opti-Loop™ Cable Wheel
FOSPCW14TMK	14	One 14" Opti-Loop™ Cable Wheel with one tap mounting bracket, nut and bolt
FOSPCW1ADSS	14	One 14" Opti-Loop™ Cable Wheel with one direct attach ADSS mounting bracket, nut, bolt and grommet
FOSPCW14HEX	14	One 14" Opti-Loop™ Cable Wheel with one hex head lag bolt, washer, and spacer
FOSPCW14CM		

Mini Shoe for FTTP and FTTH Storage Applications

The Opti-Loop Mini-Shoe was designed to store and organize the small amount of slack from a fiber drop that is to be left at an FDT (Fiber Drop Terminal). It is also to be used for the organization or storage of the minimal amount of unused multi-fiber drop, in the placing of a multiport terminal from FITS splices (Factory Installed Termination System). Additionally, the remaining cable left for future use is safely stored, as opposed to the slack hanging in a vertical coil. This procedure stores the coil in a more unobtrusive, horizontal fashion.

DESIGN FEATURES AND BENEFITS

- NEW inverted style stores fiber according to its most natural tendency
- NEW patented design also features angled slots to accommodate the use of banding material on steel or concrete poles
- Lightweight and stackable, tough UV resistant plastic compound
- No coiling of the fiber drop
- Keyed bracket slot, to prevent twisting
- Optional, changeable, mounting hardware for aerial, pole or below-grade hand holes
- All dielectric for use anywhere on the pole
- Weather resistant, non-rusting
- Tie wraps included
- Future drops can be added without disturbing the original bundle



Ordering Information

Catalog Number	Size (Inches)	Length (Inches)	Outside Diameter (Inches)
DCSU8	8	8.2	7

Tap Bracket Mounting Hardware

ATB255050

The 2 1/2" tap mount bracket is a versatile bracket for strand and messenger mounted drop installation components. Brackets are sold as a box of 50 pieces.

DESIGN FEATURES AND BENEFITS

- 2 1/2" tall bracket (distance between strand and bracket base)
- High grade 6063 aluminum alloy bracket and clamping plates (bugnuts)
- Galvanized steel bolt and square nut
- Interlocking clamping plates (bugnuts) assure a secure grip of the messenger strand - 1/4" and 5/16"
- Tap mounting hole accepts up to a 5/16" bolt
- 1/4" x 1/4" square hole at base of bracket for additional mounting options
- Contents: Sold as box of 50 pieces. (1) bracket, (2) bugnuts, (1) bolt and (1) square nut per piece.

* Use the suffix "GS" when ordering to indicate a galvanized steel bracket.



ATB255050

ATB115050

The 11 1/2" adjustable tap mount bracket is a versatile bracket for strand and messenger mounted drop installation components. The longer length of these tap brackets allow the installer to adjust the mounting height to fit the intended application. Brackets are sold as box of 50 pieces.

DESIGN FEATURES AND BENEFITS

- 11 1/2" tall bracket (distance between strand and bracket base)
- High grade 6063 aluminum alloy bracket and clamping plates (bugnuts)
- Galvanized steel bolt and square nut
- Interlocking clamping plates (bugnuts) assure a secure grip of the messenger strand - 1/4" and 5/16"
- Tap mounting slots accept up to a 5/16" bolt
- Contents: Sold as box of 50 pieces. (1) bracket, (2) bugnuts, (1) bolt and (1) square nut per piece.



ATB115050



ATB115050 hand formed

FOSBN250

The interlocking clamping plates (bugnuts) and mounting hardware (bolt and nut) are also available in bulk. Bugnut and hardware assemblies are sold as a box of 250 pieces.

DESIGN FEATURES AND BENEFITS

- High grade 6063 aluminum alloy clamping plates (bugnuts)
- Galvanized steel bolt and square nut
- Contents: Sold as box of 250 pieces. (2) bugnuts, (1) bolt and (1) square nut per piece.



FOSBN250

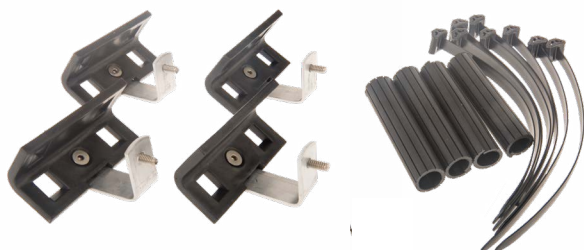
Tap Bracket Mounting Hardware

DAKITSEP

The 2 1/2" direct attach mounting bracket is a versatile bracket for ADSS mounted drop installation components. Brackets are sold as a kit of 4 with mounting hardware.

DESIGN FEATURES AND BENEFITS

- 2 1/2" tall bracket (distance between mounting angle and bracket base)
- High grade 6063 aluminum alloy bracket
- Stainless steel threaded stud, bolt and hex nut hardware
- Durable, UV resistant plastic mounting angle



DAKITSEP

Contents: Sold as kit of 4 brackets with mounting hardware, including: (4) brackets, (4) grommets, (8) zip ties and (4) hex nuts.

PBKSEP

The Hubbell all dielectric pole block kit provides ADSS cable routing and protection for your dead ending applications.

DESIGN FEATURES AND BENEFITS

- Durable, UV resistant plastic
- Galvanized steel hardware
- High grade 6063 aluminum alloy banding bracket (PBKSEPBND)
- Three individual routing holes for separation of the two bypassing cable ends plus support of the slack cable loop
- Two piece design allows for easy access to slack cable
- Protects against cable-on-pole abrasion
- Kit can be banded to pole for metal or concrete pole installation (PBKSEPBND)



PBKSEP

Contents: (1) pole block bracket, (2) 2 1/2" lag bolts and (2) 3 1/2" lag bolts